AMERICAN GAS ASSOCIATION MONTHLY

MARCH · 1935

The Gas Industry Looks Ahead
PERCY S. YOUNG

Gas Air Conditioning Drive Begins
EUGENE D. MILENER

Baking Characteristics of Ranges
R. M. CONNER

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AMERICAN GAS ASSOCIATION MONTHLY

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Published monthly by the American Gas Association. Publication Office, American Building, Brattleboro, Vt. Editorial Offices, 420 Lexington Avenue, New York, N. Y. Address all communications to 420 Lexington Avenue, New York, N. Y. The Association does not hold itself responsible for statements and opinions contained in papers and discussions appearing herein. Entered as Second Class Matter at the Post Office at Brattleboro, Vermont, February 10th, 1922, under the Act of March 3, 1879.

SUBSCRIPTION RATE : $3.00 A YEAR

The serenity

of the day . . . .

depends upon its beginning

(*Photographs courtesy Miss Anne Sterber, 11 W. 42nd St., New York.*)

AMERICAN GAS
ASSOCIATION
MONTHLY

James M. Beall, Editor

The Gas Industry Looks Ahead

By PERCY S. YOUNG
President, American Gas Association

P. S. Young

WHAT has the gas industry to learn from its experience under regulation? Has there been fostered a larger sense of responsibility by managements, a stronger initiative in developing efficiencies and increasing economies, and an enlargement in the use of gas? Has the proper economic balance been maintained between the consumer, the worker and the investor? Upon the answer to these questions and on others that might be propounded, must both the management and regulation be judged.

Change of Approach

We are going through a period which has produced in some respects a change in the approach to economic problems. The gas industry has not been unaffected by it. Eventually, it is to be hoped the proper path may be found to a recovery of well-ordered production and consumption and a wider distribution of material well being. The industry is heartily supporting measures designed to improve economic conditions and is contributing its share of effort and enterprise, counsel and proper sacrifice to advance the general good and should share the eventual benefits which we all hope will follow.

Gas company operation is largely standardized. Its processes of manufacture are well established and highly specialized. Its distribution practices are also well standardized so that generally we may say that the operation of the physical plant of a gas company is under good control in so far as technical efficiencies under competent management can govern. Recent improvements such as the use of bunker oil in the manufacture of carburetted water gas have materially helped to stabilize the cost of manufacturing such gas and have removed one of the chief variables which formerly was present when a less basic manufacturing material was required for water gas enrichment.

Improvements in coal gas manufacture have been of prime importance in stabilizing the cost of coal gas. The importance of this stabilization is frequently overlooked, for variations in ultimate cost to the user detracts from the use of any product. The fact that so much of the ultimate cost of gas to the user is made up of the fixed charges which must be passed along per unit of commodity sold, which proportion of cost is greatly reduced per unit by increases in the quantity sold, and as quantity affected price, emphasizes the great importance of stability of cost to both quantity and price.

Employment is regular in the gas industry and wages are well maintained. The factor of security for the future is high compared with industry as a whole. In the manufactured gas branch of the industry, the total employees in 1933 were 71,000. Gross revenues of manufactured gas companies for 1933 were 377,880,000 and the total payroll was $104,784,200 or 27.7% of gross revenue. In the natural gas branch, there were 48,200 employees, total gross revenue was approximately $302,026,000 with a payroll of $63,000,000 or 20.8% of gross revenue.

Employee Training

The gas industry owes it to itself to provide for competent training of its employees. This, perhaps, is largely the task of the individual companies but it should have the support of the industry. Without doubt, it is one of the functions of the American Gas Association to foster action to this end and provide certain of its facilities for this purpose. Technical courses in connection with the industry are being conducted in the form of correspondence courses at the University of Kansas and Columbia University, and in research at Rutgers and Massachusetts Institute of Technology, while scholarships are supported by the American Gas Association at Johns Hopkins, West Virginia, Purdue and Oklahoma universities. In addition, there have been practical gas educational courses given under the auspices of predecessor associations, notably the Ameri-

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Address delivered at the anual meeting of the New England Gas Association, Hotel Statler, Boston, February 14, 1935.

can Gas Light Association, which were conducted by Dr. Walton Clark and Alfred E. Forstall, and courses on salesmanship, accounting, management and other subjects by the National Commercial Gas Association as well as by the American Gas Association.

Technical journals in the gas industry have educational value for many in the industry and they should be encouraged to develop that side of their service. I cannot sufficiently emphasize the importance to the industry of development of means of education for its personnel, both along technical and commercial lines, and of constant and intelligent emphasis being placed on this phase of the industry's obligation, for its future growth and development.

Taxation

In the conduct of any business a tendency may develop of meeting day to day problems at the expense of fundamentals. A far-sighted view must be taken if the industry is to be progressive in its policies and fully grasp its opportunities. Relations with equipment and other suppliers should be maintained with this in mind. Development of efficient apparatus requires co-operation between manufacturers of such apparatus and operating companies. The maximum advance cannot be made without such co-operation.

The utilization and sale of residuals offers a wide field for development. They are basic commodities and their utilization is comparatively limited. Their proper disposal affects the cost of gas materially and this deserves special attention.

In common with all other forms of business, the gas industry is feeling the abnormal burden of taxes. The nation is suffering from high taxation and, in addition, is borrowing enormous amounts to meet the deficits which have amounted to 18 billion dollars during the five budget years ending with the budget year 1935-1936, and over 4 billion dollars per year for the three years ending with the same budget year. This, in turn, means more taxation in the future. The annual national income in recent years is estimated at 45 billion dollars, while taxes, including all government,—national, state and local,—are 9 billion dollars, or 20% of total income as compared with food requirements of 17% and clothing 9%.

Congratulating His Successor

F. M. Goodwin, retiring president of the New England Gas Association, shaking hands with R. H. Knowlton, incoming president

The difficulty of collection of taxes shows that we are nearing the limit of ability to pay them. High taxation is one of the basic problems the country faces. Solution must chiefly come from less spending on the part of all governmental bodies and certainly cannot come from new avenues of taxation so frequently advocated, which only increases the burden in another form. It is the duty of the people to support the government but there is danger in the tendency to look to the government for support. The incentive to employ capital for productive purposes is destroyed when such a large provision from earnings must be made for taxes with capital taking all the risks of loss. The investor naturally looks to tax exempt securities into which to put his money, if he does not ask the question, why save or why work.

An Associated Press item that appeared lately states that a recent report on National Public Works, published by the League of Nations on the basis of reports from all nations including the United States, contains a reply from one nation, Great Britain, to the effect that "an experiment of large public works as a method of dealing with unemployment has been tried and has failed and it is not intended to repeat it; that the ultimate test of each work must be its social or economic value and that the stimulation of public works selected primarily in respect to their employment—providing capacity had little effect on unemployment in proportion to the heavy expenditure incurred; that "the work, when completed, leaves burdens on national and local finance which impede the recovery of normal activity which will most surely and rapidly be brought about by the creation of confidence, particularly by a balanced budget, the lowering of the rate of interest and facilities for the removal of hindrances to trade."

No one can say where to draw the line in a country of great national resources such as ours in a time of distress because of wide unemployment, between expenditures for public works on a large scale and other measures, but that such expenditures

must be kept under proper economic control, because of their ultimate effect on industry, is obvious.

The taxes paid by the gas industry must ultimately be paid by the gas consumer. The taxes paid by the gas industry in New England amounted, in 1933, to 14.11% of revenue from gas sales, or 17.08 cents per MCF sold. From its revenue of $49,364,200, it paid in taxes $6,967,500. Gross revenue per customer averaged $36.92 out of which $5.21 was paid in taxes. Such a situation is a severe handicap to the prosperity of the business and creates an inordinate burden upon all consumers of gas.

Competition

Any business to thrive must not only take account of present but of potential competition. Purchasers of appliances or equipment for utilization of any product consider the permanency of the competitive market in making the decision which commits them economically to the use of such product until competitive conditions change to such an extent as to warrant investment in other equipment.

One of the strong features of gas service is its sound economic position with respect to competitive fuels. Fluctuations in price are absent, quality is assured and permanency of supply is unquestioned. As a fuel, gas must meet on a competitive basis other sources of heat such as coal, wood, oil and their derivatives, electricity, etc.

One of the bases for unthinking criticism of the gas industry in the past has been its monopolistic nature, and the absence of competitive gas service. Under the system of regulation now generally existing throughout the country, the monopolistic nature of the business has come to be recognized as essential to the interests of its consumers. However, many people mistakingly fail to recognize that while competition in the specific product may not exist, competition in what the product yields, viz., its heating qualities, is very keen. Gas, of course, competes with all other sources of heat and its services have never been so highly competitive perhaps as at the present time.

Limitation of markets results in highly strenuous competition, production in all lines always pressing for its share of the total demand. Modern requirements are increasingly on the side of convenience, comfort, quality and service as well as cost, and any industry makes a mistake if it belittles any of these constituents. At the same time, the conditions which now obtain, and, which if we are wise we will assume may obtain for some considerable time in the future, point to more consideration being given to the dollar outlay, and we must be prepared to evaluate our product in competition with coal, coke, oil, electricity, ice or anything else on a studied competitive basis.

No field of utilization can be considered safe from competition by the gas industry or any other industry. The danger signals are up whenever such a state of mind is established. From the very nature of its service, gas has the advantage from the point of view of incremental cost as compared with the majority of its competitors and this fact brings us to the consideration of what is the form of rate structure best designed to keep in advance of the competitive market.

Rates

If there is to be sound progress in the gas industry it must be founded upon proper rate structures. By that I mean that rates must take into consideration both the cost and the value of the service. It is safe to say that 50% of consumers of gas in New England pay less than the cost of their service, consequently, the burden of making up the difference below cost must be carried by others than these consumers who are, in large part, what might be termed convenience users. This checks the utilization of the service by those who clearly have competitive choice and so reacts to the disadvantage of both present and potential users of the service.

Class rates are accepted as eco-

Feature of New England Convention

Directors' dinner during the recent annual meeting of the New England Gas Association

nomically sound by rate-making bodies. A special committee of the American Bar Association considered in 1933 the propriety and legality of class rates and reported in part as follows:

"The classification of customers or patrons according to reasonably defined circumstances and conditions affecting their service is traditional in utility law and rate-making practice, and, indeed, is but the application of the general rules governing exercise of police power. Differentiation in rates goes with classifications of service; the historic concept is of like rates under like conditions of service; the common law and the regulatory statutes alike declared the tests of reasonableness and good faith in classifications based upon pertinent factors, and of reasonableness and good faith in the development of rate differentiations adapted to the respective classifications and varying conditions of use of the service. It is settled law that a public utility may and should establish such reasonable classifications of its customers and service, and develop for each classification suitable and reasonable rates, without intent to discriminate unduly or unjustly, in or through such classifications or such rates."

Service Charge

For the consumer to get the most benefit at the lowest cost from any utility it is necessary that the plant be utilized to its maximum service capacity. As rates are adjusted without unfair discrimination to this end, so will all consumers gain advantage. Simplification and standardization of rates are important as aids to satisfactory relations with customers but not at a sacrifice of proper adjustments to meet competitive conditions. Rates should not be allowed to become static. Experimental adaptations to new conditions are required for development of new business that may be on the frontier of our settled economy.

The service charge type of rate has, by force of circumstances, been brought into the forefront of rate consideration in recent years. It has been recognized in some form or other by regulatory authorities. The Committee on Public Utility Rates, National Association of Railroad and Utilities Commissioners in 1927 concluded their report as follows:

"Your committee, while not recommending to regulatory commissions or to gas companies any rigid uniformity or standardized method of rates and charges for gas, which should remain a matter for the best business judgment in each individual case in accordance with the local situation, does, however, heartily approve methods of charges for gas based on allocation of costs of service, so as to permit the gas industry of the country to develop its maximum possibilities in more extensive and more economical service to the public."

One of the more readily acceptable of this type of rate is that in which the service charge is included in the first step of a few hundred cubic feet for a fixed sum. With such a type of rate, the blocks to cover incremental costs including a return can be adjusted to meet the competitive situation existing and thus help keep down rates to all consumers. The report of the 1934 Rate Structure Committee of the American Gas Association gives a table showing the increase in number of service charge rates and per cent they bear to total rates as follows:

Year	*Number of service charge rates for general and domestic service*	*Per cent of total rates for general and domestic service*
1925	245	25.7
1930	439	40.6
1933	627	50.8

High average domestic consumption and low average domestic rate are indicants of service and such types of rates must be relied upon to improve these averages. Class rates of this type for space heating are in general use and to cover the water heating field it would seem desirable to arrive at a satisfactory classification for consumers who use this service which has its own peculiar characteristics. Industrial and commercial classifications are now widely recognized as desirable for optimum development of this business and for their contribution to rate improvement for all classes of consumers.

Sales Policies

Giving consideration under this heading to all contacts with our customers leading to the sale of our product, we find that they embrace much that is important to the welfare both of the industry and of its consumers. With rates fairly developed and fairly applied, it still remains to cultivate the market to its maximum extent. It is conceded that there is no such thing as complete saturation of the market for gas. The thing of importance is to bring about the greatest possible trend in that direction. Rate and competitive cost studies must be continually pursued as a whole and in their application to particular consuming groups.

Sales organizations with executive authority are a necessity as well as a competent and properly paid personnel. Specialists in all lines are needed and a thorough knowledge of the customers wants must be acquired by means of customer surveys and other factual studies. Introduction of the best appliances must be brought about through company sales and through co-operation with dealers and others. Without a doubt, time sales with liberal terms are required for their distribution.

Basic Market

The domestic cooking load still provides the largest requirement for manufactured gas and to that extent it is the basic market upon which to build other sales. Water heating, refrigeration and house heating must be extended energetically for domestic use if that market is to be preserved. The enormous market for house heating sales is a challenge to the industry. Neither must the industrial or commercial field fail to be energetically developed. Competition is keen, householders, manufacturers and commercial users are looking for economies as never before and are not content today with anything less than the best service at a competitive cost, and it is the industry's duty to give all its consumers such service at the lowest possible cost consistent with preserving the integrity of its property.

The gas industry has a long record of useful service. It provides an essential service. It has had a steady growth through good and bad times alike. It can lead the way to a higher living standard. Governed by enlightened policies and under sound regulation, it looks forward confidently to greater service to the public and a prosperous future.

The Drive Begins for Summer Air Conditioning with Gas

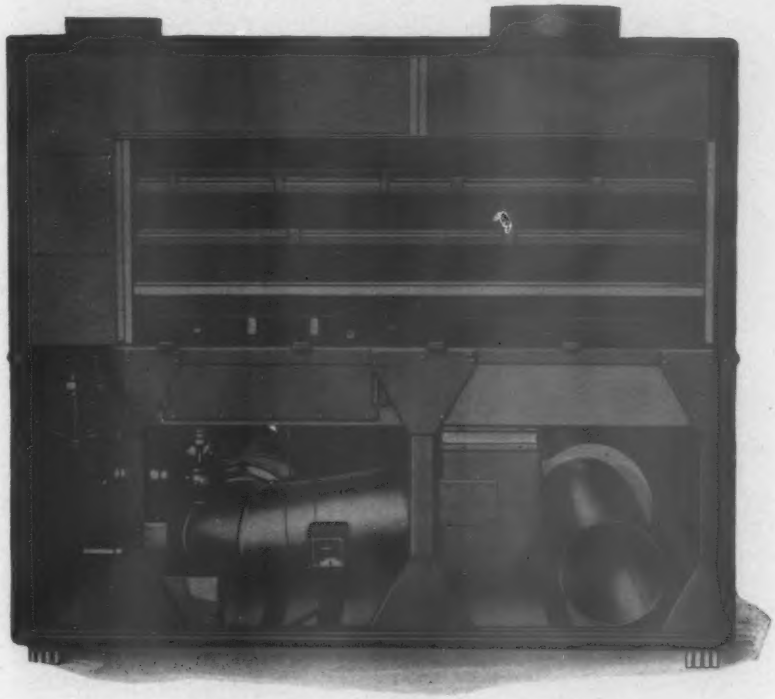
By EUGENE D. MILENER

Secretary, Committee on Industrial Gas Research

ON February 23, The Bryant Heater Company announced in the trade press that it was prepared to offer the industry a line of central gas-operated summer air conditioners and that sales engineering schools in seven cities would be held immediately so that an aggressive campaign could be started to promote the installation and use of gas in this new field.

Thus a new chapter is opened in the utilization of gas. It marks the commercialization of the first fundamentally new use for domestic gas since the introduction of the gas refrigerator. It marks the point at which the gas industry publicly offers all other industries a new, effective and economical means of treating air for industrial process work during the summer months.

The operating principle of the new unit involves no low temperature required to obtain proper humidity control. It provides direct dehumidification independent of cooling, and, of course, uses gas in the process.



Sectional view of new Bryant Silica Gel gas dehumidifier

Air Conditioning Equipment

Equipment required to dehumidify air consists of Silica Gel supported in suitable beds, fans to convey the adsorption and reactivated air through the beds, a heater, motor, cooler and suitable automatic controls. For continuous operation, the Silica Gel beds are placed in two stationary compartments, which are connected to suitable ducts and rotating valves by which the air stream or gas-heated activation air is alternately passed at predetermined intervals from one compartment to another. The complete cycle is under automatic control.

The purpose of the schools is to provide a better knowledge of the various ways and means of air conditioning for comfort, and to overcome certain popular misconceptions by the elimination of any so-called mystery from the subject. Realizing the impracticability of turning out a finished air conditioning engineer over such a short period of instruction, the course is designed to give only the necessary foundations for gas men who sell, design or install air conditioning equipment.

The program is under the supervision of James C. Patterson, manager of air conditioning sales, The Bryant Heater Company. Working with him are Major W. E. Stark, R. W. Kubasta, Bayard P. Fonda, air conditioning sales engineers connected with the Bryant organization.

The course, treating specific phases of air conditioning, will run for three days in each city, and will include various phases of the following subjects: Thermodynamics of Refrigeration and Adsorption, Load Determinations and Calculation, Selection of Equipment and Distribution of Air, and Finding and Selling the Prospect.

Location of the schools will be as follows: Cleveland, March 5-7; Houston, March 12-14; Chicago, March 19-21; Philadelphia, March 26-28; New York, April 1-3; and Boston, April 9-11.

Research and Development

Back of the introduction of the new unit is a story of research and development which was cooperated in by the entire gas industry. In fact it is safe to say that had not the entire industry cooperated gas summer air conditioning would not be available as a practical sales matter today.

At a meeting in 1928 the Committee on Industrial Gas Research considered the subject of developing a practical method whereby gas could be sold *in the summer time* for air conditioning purposes. In a report which the committee had had prepared it was pointed out that there were, theoretically at least, seven dif-

First home to be air conditioned with gas, Pelham, Westchester County, N. Y.

ferent methods for transposing the heat energy of gas into effective summer air conditioning.

The committee decided to encourage the development of all the theoretically possible methods, but it recognized the necessity for active sponsorship of at least one method if any practical results were to be attained in a reasonable time.

The first question to be decided was which method gave promise of being susceptible to the most rapid development and at the same time appeared to have the fundamentals of cheap operation and adaptability to simplified mechanism. Another question was what special advantages could be incorporated in each method.

Dehydration Method Selected

There was no precedent or experience on which to base a decision. However, as a result of the studies that were made it was decided that the quickest and most substantial progress could probably be made by developing the adsorption dehydration method. The committee believed that this method had the greatest possibility of becoming an active competitor of electric summer air conditioning and besides it appeared that a very important element that is missing in electric, steam and ice air conditioning could be worked into the proposed gas system, namely, the independent control of humidity and temperature.

This decision was not easy to make. The current thought in heating and ventilating circles was confined almost exclusively to refrigeration as a means for air conditioning. Literature of the day and the expressed opinions of leaders was that one need not go beyond refrigeration, whatever its limitations, to produce summer air conditioning. There was in engineering circles, inertia and downright antagonism to be overcome on the part of anyone advocating methods other than refrigeration. The Research Committee, however, decided that the dehydration method offered a means for the gas industry to enter this field on a profitable basis and that it could by this means offer the public certain qualities in summer air conditioning not being offered by the conventional electric or turbine driven refrigeration methods.

Choice of Silica Gel

Once that decision was made it was a matter of research, development, field testing and commercialization before the public could be offered satisfactory equipment. There were a number of adsorbent materials, both solid and liquid, which could be used for direct dehumidifying and which can be reactivated with gas heat. Their qualities vary chiefly as to one's ability to build practical apparatus around them. For purposes of expediting the development, Silica Gel was selected and the program was carried out by its use. It is Silica Gel apparatus that is now being offered for all summer air conditioning purposes as the gas industry's drive opens for its share of this very desirable business. Active cooperation in making available gas apparatus, using other adsorbents, has of course been part of the committee's program.

The patentees of Silica Gel devised

Inspection of gas dehumidifiers by A. G. A. Committee on Industrial Gas Research

some crude apparatus and attempted to air condition a theatre with gas, in McKeesport, Pennsylvania, during the summer of 1929. It is known as the Harris Memorial Theatre and was the first building to be conditioned with gas by the adsorbent method. The Research Committee delegated its secretary to follow this experiment through as an observer.

At the end of the summer by mutual agreement the task was dropped and all apparatus was removed. While this first application left much to be desired it proved to the committee that the fundamentals of the dehydration method were sound and arrangements were then made whereby the Silica Gel Corporation would develop improved apparatus under the committee's sponsorship. The committee undertook to evolve the various factors that had a bearing on applying gas to air conditioning and also undertook to familiarize the gas industry, the engineering professions and equipment manufacturers on the possibilities of the adsorption method using gas.

Year 'Round Air Conditioning

The entire approach to this subject was made by considering summer air conditioning as an integral part of year 'round air conditioning. Following out this view, the committee coined the phrase "Year 'Round Air Conditioning" and presented a breakdown of the six factors that constitute year 'round air conditioning. This breakdown, which has since become almost the universal method used throughout the air conditioning business, is as follows:

WINTER AIR CONDITIONING

1—Heating
2—Humidifying
3—Cleaning
4—Circulating

SUMMER AIR CONDITIONING

1—Cooling
2—Dehumidifying
3—Cleaning
4—Circulating

Through various steps apparatus was developed with progressive increases in capacity and reliability, and occupying less space. Field tests were undertaken with the cooperation of local gas companies. The first dwelling to be air conditioned with gas was in Pelham, N. Y., and was made available to the committee by the Consolidated Gas Company of New York and the Westchester Lighting Company. The second which followed shortly was in Chicago and was made available by The Peoples Gas Light & Coke Company. Others were located in Dallas, Baltimore and Philadelphia. In each case equipment was underwritten by the Research Committee and installation was arranged by the local gas company. Also two small size industrial installations of a test nature were made under the same arrangement. In the meantime three or four large commercial and industrial installations were made, one being in the new office building of the Dallas Gas Company which was the first gas company office to be summer air conditioned with gas.

Chicago home, second to be air conditioned with gas

Relief of Hay Fever

It was early recognized that conditioning the air hay fever and asthma sufferers breathe would probably bring relief but not necessarily a cure. A prominent group of specialists at the Departments of Physiological Chemistry and Medicine, University of Illinois Medical School, undertook to determine the extent to which air treated in a gas Silica Gel dehumidifier would give such relief. The Research Committee assisted in making available apparatus which was installed in a clinic by The Peoples Gas Light & Coke Company. At the end of the hay fever season the published report of the physicians included the following:*

> Twenty-five patients with pollen asthma were confined in the ward from 5 to 31 days during the 1933 pollen season. As in our previous observations, patients with mild asthma were relieved in twenty-four hours, while those with very severe asthma required from 2 to 18 days for complete relief. However, with the low relative humidity and relatively constant temperature the *degree of relief obtained was greater and more prompt* than in our previous experiments.

This emphasis is of particular significance in view of the fact that these specialists have probably conducted more work in this field than any other group and that in their previous experiments they had used plain filters and electric air conditioning apparatus.

All manufacturers of gas heating apparatus and other manufacturers closely investigated the gas adsorption method and compared it with the refrigeration method, which is in general use. It is safe to say that as a result of these studies a large majority of the engineering staffs of gas furnace and boiler manufacturers recognize the adsorption method not only as the most practicable means of applying gas to this new service, but also as having certain exclusive fundamental advantages. The Bryant Heater Company is the first of this group to offer to the public a regular line for both domestic and industrial purposes.

* For more complete results of these experiments, see A. G. A. MONTHLY, January, page 6.

All the experimental and test installations consisted of handmade apparatus. The apparatus which the industry is now able to offer the public compares in quality with the best gas heating furnaces and its appearance adds to the attractiveness of any modernized basement or industrial plant.

Natural Gas Convention To Be Held in Memphis

J. B. Tonkin

ARRANGEMENTS for the convention of the Natural Gas Department of the American Gas Association, to be held in Memphis, Tennessee, May 6-9, are rapidly being completed. The program and publicity committees, meeting at the Peabody Hotel, Memphis, discussed a number of innovations on the program which promise to make this convention outstanding in the history of the department. An added incentive is the fact that this will be the first separate convention of natural gas men since 1932.

The first general session of the convention is to be held Monday afternoon, May 6, starting at 2 o'clock. The program committee decided to devote Monday afternoon, Tuesday, Wednesday and Thursday mornings to general meetings, which will include subjects of interest to everyone. Tuesday and Wednesday afternoons were set aside for simultaneous group meetings. These group meetings were divided under two general headings: Gas Sales, Distribution and Utilization in one group, and Production and Transmission in the other group. Papers of a technical or semi-technical nature will be presented at the group meetings.

No specific subjects were selected for discussion at these group meetings, but committees were appointed to select subjects and speakers and report their decisions back to a subcommittee composed of the chairman, vice-chairman, and secretary of the department. These three officials will then complete the program.

The committees appointed to line up the program for the group meetings are: Production—Robert Hendee, Tulsa, chairman, and Don Wilson, Pittsburgh; Transmission—E. F. Schmidt, Dallas, chairman, and John Clark, Hope Natural Gas Company; Sales—W. W. Winter, Atlanta, chairman, and J. V. Strange, Houston.

A program was decided on for the general sessions, as follows:

Monday afternoon, May 6—Opening remarks by the chairman, John B. Tonkin. Introduction of Mayor Overton of Memphis by W. J. O'Brien, president of the Memphis Power and Light Company. Chairman's address. Address by Percy S. Young, president, American Gas Association. Review of Association Work, Alexander Forward, managing director, A. G. A. Address, "Taxation and Legislation," Ralph W. Gallagher. Report of Program Committee outlining program for remainder of the session.

Tuesday morning, May 7—This session is to be turned over to the technical committee to select subjects. Among items placed on the program for this session are the report of the Technical Committee and an address on "Gas Discovery" to include all methods of gas discovery from ancient to modern.

Wednesday morning, May 8—"Wrinkles," H. J. Hoover, Cincinnati. "Natural Gas Fellowships and Educational Progress in Natural Gas Engineering," J. B. Tonkin. The remainder of this morning will be devoted to the general subject of Sales, Utilization, Advertising, and Load Building Problems. Under this general head there will be an address on "Air Conditioning" by a speaker as yet to be selected, and a paper on "Whole Organization Attention to Sales." E. M. Tharp of the Ohio Fuel Gas Company was assigned to this paper with S. B. Severson of the Republic Light, Heat and Power Company of Buffalo to lead the discussion. F. M. Rosenkrans, chairman of the Commercial Section of the A. G. A., probably will give a report of his section at this session.

Thursday morning, May 9—Address by John W. Finch, new director of the U. S. Bureau of Mines. Address, "Natural Gas Reserves and Conservation Thereof," H. L. Dickerson. Address, "Improvements in Gas Transmission," speaker to be selected.

Tentative plans call for some entertainment event for Thursday afternoon. The general entertainment has not yet been arranged.

John B. Tonkin presided at the Program Committee meeting with William Moeller, Jr., of Los Angeles, as vice-chairman. Captain Higgins was secretary of the meeting.

Those present at the meeting were: W. J. O'Brien, Memphis; F. L. Chase, Dallas; J. D. Creveling, New York; H. L. Dickerson, New York; Edgar G. Hill, New York; William Moeller, Jr., Los Angeles; J. B. Tonkin, Pittsburgh; R. W. Hendee, Tulsa; B. F. Pickard, Tulsa; E. L. Rawlins, Bartlesville; Frank Smith, Houston; R. G. Soper, Dallas; R. E. Wertz, Amarillo; Paul Renshaw, Memphis; Douglas Buckler, Los Angeles; Lester Moore, Shreveport; C. D. Greason, Kansas City, Mo.; Will C. Grant, Dallas.

Regulation by Intimidation

THERE is a spirit abroad in the land which seems to consider any act of antagonism to public utilities an act of merit," declared George B. Cortelyou in a talk before the Quarter Century Club of the Consolidated Gas Company of New York on February 7. "It plays its part in outrageous and discriminatory taxes. It plays its part in fads of regulation which cost the public large sums for no practical beneficial results. It plays its part in threats of public competition with the electric utilities and in actual competition with them at many places by the use of taxpayers' money, which they help supply,—competition that is contrary to every principle of justice and fair play, contrary to the declared policy with respect to other industries, and, what seems to be entirely overlooked even by the supporters of private enterprise and initiative, contrary to the American tradition of the function of government itself. Where this spirit is sincere it is largely mistaken. Where it is not sincere it is vote-seeking politics, dangerous alike to the utilities and to the public.

"The fact that the utility industry is one of the country's largest and most successful industries alone makes it a conspicuous target. It has at least 20,000,000 consumers and practically every consumer is a voter. This is a combination that appeals irresistibly to the political opportunist, whose paramount interest, of course, is not in rates but in votes and he attacks the one in order to attract the other. The political concept of a high utility rate is any rate that enables the company to live. For the orderly processes provided by law for the regulation of rates there is substituted the vicious process of Regulation by Intimidation. . . . ."

"In the present emergency through which the utilities are passing it is more than ever necessary that, while defending their constitutional rights and resisting unjust assaults, employees redouble their efforts to improve the quality of their service and to hold and increase the good will of their customers. If there is anything more essential to a public utility than customer good will, I do not know what it is. Good will is a product of good service, or perhaps I should say a by-product,—that is, it is a by-product of day-by-day fair and honest dealings between the company and its customers; and, like honesty and integrity, those who have it most speak of it least. Good will, like a good name—some one has said—is gained by many actions, and lost by one. It is an asset that adds to the value of every other asset, indeed, is often worth more than all the other assets combined."

Again the Customer Supplies the Facts

By GEORGE KETCHUM

President, Ketchum, MacLeod & Grove, Inc., Pittsburgh, Pa.

George Ketchum

WHAT does the American public really want to know—what does it believe it already knows—about the natural gas business? What are its opinions, its criticisms, complaints, prejudices, preferences, its likes and dislikes?

Here is at least a partial answer. It is the story of an attempt to look into the minds of several hundred thousand consumers of natural gas, and learn what significant thoughts are there as to gas company policies and operating methods. It is a story dictated by these hundreds of thousands of customers to several thousand gas company employees with whom they come in frequent and regular contact, and transcribed by these employees for the information and guidance of gas company managements.

Customer Wants a Bargain

It is important at any time that company executives should know, as completely as possible, what is in the public mind as to the gas industry. It seems especially important just now, when there are so many self-appointed interpreters of public opinion, each of whom claims to represent the public and to be voicing its demands. It is easy, at such a time, to be misled into thinking that the cheerleader really does represent all the folks in the grandstand. But it is hardly safe, or desirable, to take that for granted.

So it seemed, at least, to the managements of three companies in the Pittsburgh district. They wanted the facts; and they wisely decided to get them as accurately as possible, from sources that are authentic and uncolored. That meant going directly to their customers; which means, of course, that they aimed their inquiry at a population of approximately 2,000,000, comprising more than four hundred thousand families.

What they learned is significant, not so much because it is new or novel, but chiefly because it is just the reverse of that. Perhaps it serves chiefly to confirm a belief that fundamental human nature does not change; that *homo sapiens* is much the same in his capacity as gas consumer as he is in his other relationships. For certainly the results of this inquiry may well be compressed into this single sentence:

The average customer is almost entirely concerned with the gas company only as it directly affects his own interest, and especially as it affects his pocketbook.

By way of elaboration, and to properly indicate the negative side of the picture, it should be noted that this same average customer is only mildly interested, if at all, in the things which so excite the utility-baiter. He cares little about broad economic and social questions, about the philosophy of public and private ownership. He is overpoweringly anxious to get as much as he can for as little money as possible, and to be as certain as he can be that he is getting it. In other words, he wants a bargain.

Complaints Classified

This interpretation may be oversimplified, yet it seems borne out by the facts which follow. In the ensuing paragraphs is given a digest of the reports made to these three companies by their employees, after they had been asked to report to their managements the questions, criticisms, complaints and misstatements which they most frequently encountered among gas consumers.

As was to be expected, these reports contained several thousand individual questions or statements; but, of course, they can be classified much more simply and easily than that. Indeed, we find that there are only nineteen separate pigeonholes into which can be filed practically all the criticisms and complaints which are at all frequent. So far as the others may defy classification, it is because they are local, perhaps personal, in character; or because they are rare or even ridiculous.

Approximately 81% of all items reported come under just five headings. Superficially, there is wide range, but basically there is a definite common interest on the part of the public in these five subjects. Here they are, in the order of their frequency:

Public Theories of Gas Quality

First of all, *gas* itself, marked particularly by curiosity as to its quality. Most frequent complaint in this category (most frequent, indeed, of all charges against the industry) is that there is air in the gas. The assumption of many is that this is the real purpose of compressor stations.

Probably this should teach us tolerance toward critics of the industry. If it is possible for so many people to be fantastically wrong on such a simple point as this, maybe we should anticipate error and misunderstanding on more complex questions.

Another fairly common theory is that the gas company puts water in its pipe lines—for what purpose, deponent saith not. But they think that's what makes the walls and windows sweat so.

Another idea, with many adherents, is that gas isn't as good as it used to be, and that this is particularly true in winter. The basis for this seems to be that the range or heater doesn't throw off as much heat on cold days as on warm ones! Some other people think the real trouble with gas nowadays is that "all the good" is extracted from it in making gasoline.

Our second general category is *service*—a broad subject, with many ramifications. To begin with, the ordi-

nary customer does not realize the extent of the service which the gas companies are ready to render. But many questions are asked in this field, even though the questioner doesn't always know that he is talking about something that comes under the head of service. One troublesome subject, of course, is low pressure. Another is the maintenance or alteration of service lines between curb and meter. Another is the blackening of pots and pans and of kitchen walls. A further group of complaints has to do with other faults of appliances. Occasionally—though with heartening infrequency—there is criticism of a company's general service facilities or of inattention or discourtesy on the part of an individual employee.

Meter Complaints Frequent

Third in order is the subject of *meters*. Only less strong than the public's conviction that there is air in the gas, is its belief that the meter is dishonest. Few, if any, understand the meter's mechanism; a prevalent idea is that it is actuated by clockwork, and that the clockwork was designed by John Dillinger. Knowing nothing of the regulations which govern meter changes (required in Pennsylvania at least once every five years) the housewife usually assumes that the new meter means larger gas bills. "What's the matter, doesn't the old meter run fast enough?" is a question repeated hundreds of times in these questionnaires. And the method of clearing out and testing the lines when the meter change is made only seems to confirm the often-voiced suspicion of air in the gas.

Many customers have an equal lack of faith in the meter-reader. Too common is the claim that the reader never really looks at the meter; that he is a writer rather than a reader. "Why is my bill always the same?" is the kind of question which proceeds from this state of mind. Another frequent assertion is, "We were away half of last month, but our gas bill was just as big as ever." Still others say, "I was out of the house all that day; how could anybody have read the meter?"

Another apparent source of tribulation for the consumer is the location of the meter. Not all are as unhappy as the woman who said, "Isn't there some way you could move the meter out of the bathroom?" But there are some who want the meter moved out of the house, and some who want it moved into the house; some want it in the cellar, some in the kitchen. This is one question on which there is complete lack of unanimity.

Rates Rank Only Fourth

Not until now—fourth in order—do we come to the matter of *rates*. If we believed our severest critics, this ought to be first in rank; but the customers actually put it fourth. Much of the questioning is general: "When are you going to reduce your rates?" Many object to the minimum charge; most call it a service charge. Some claim that rates are high in contrast with other areas, though usually they are inaccurate or unfair in their comparisons. Many questions deal with the relative costs of gas and other fuels. A goodly number think the rate reduction of 1933 (applying to all quantities above 15,000 feet per month) should have been extended to smaller users of gas.

A great many urge a separate rate schedule for gas heating; of these, a fair proportion seem unconscious that much of the heating load may come under a 45-cent rate (60¢ is the rate for the first 15,000 cu.ft.). Some of those who want this preferential heating rate also ask for a guaranty by the company that the rate will not be pushed higher after they have put in gas equipment.

Fifth and last in this group of major topics is *high bills*. High bill complaints come, as of course all gas men know, from a comparison of this month's bill with last; of January's bill with July's; of the complainant's bill with a neighbor's. Apparently most of them come from small users. Where they originate with house heating customers, they are based largely on what the customer thought a salesman told him about the cost of heating his house.

Here they are, then, the big five: quality of gas, service, meters, rates, high bills. After these we come to lesser categories; and one of these minor groupings has to do with company profits. Not that many customers have actual knowledge of gas company balance sheets; but some of them (living in producing territory) have an erroneous idea of the spread between the price of gas at the well and in the customer's house. Few who discuss the matter of profits appear to realize that gas company income has shrunk during recent years. Some express indignation that the state should guarantee profit to a gas company, when other businesses have to go out and fight for their earnings!

Of just about equal interest is the matter of collections, with complaints as to the strictness of the gas company in collecting its bills when it has (in the mistaken opinion of the complainant) plenty of security in the customer's deposit.

A large number ask about gas heating. Some of these we have touched on under rates. Other questions have to do with the merits and demerits of conversion burners, with the relative advantages of gas and coal, with central heat vs. radiant heat.

Minor Questions

A considerable curiosity still exists as to the supply (or scarcity) of gas. A few are skeptical even as to present resources; but many more want assurance as to the future.

Next in line, probably, are questions about the selling of gas appliances. Not many could be classified as objections to the policy. Rarely is there any reflection on the quality of appliances sold by the companies. Most often it is a complaint that these appliances are on to high a price level.

Occasional questions are asked about taxes—not many. Some think the company should not bring in gas from a distance when nearby wells are available. Some object to the idea of a deposit.

This covers all the questions and criticisms which are heard frequently by employees. There are many, many others; but each crops out only once or a few times in all the

collection of material. Criticisms that relate to company ownership, to monopoly, to personnel, to the safety of gas, to selling methods; you find these and others so infrequently that it seems fair to regard them as of small moment to the average customer.

It seems unlikely that the answers to these questionnaires include the reactions of those customers who are in the top income brackets and comprise the small though most profitable groups of industrial as well as domestic consumers. But this seems unimportant, since there are ample means of communication between this type of customer and company managements. The necessary thing in such an investigation as this is to get to the grass roots. This has been done. The result is that these three companies are now in possession of accurate and fairly complete information as to what the Smiths, the Joneses, the Browns and the Robinsons know—or think they know—or want to know—about gas, gas companies, gas service, gas appliances, and all the other main factors in the industry.

Admittedly, this is no scientific survey. It has not been conducted by psychological experts. The questions and answers have not been weighted and measured as to their relative importance. These reporters are amateurs, not professionals. Some of them have been very casual about it, some of them almost too earnest; some are verbose, some are all too brief. Many, perhaps, have written their reports when they were too strongly impressed by the emphasis of some recent criticism; maybe some of them have indicated that a question is common when it is true only that it was the last one asked of them by a customer. But, averaging everything and making all reasonable allowances, this seems a pretty accurate cross-section of public opinion.

Reference already has been made to the principal conclusion which may be drawn from this inquiry—the customer's desire for assurance that he is getting his money's worth—and more. Surely a corollary is this; that *any improvement in the training of employees will directly improve the company's and the industry's relationship with its customers.* Make it easier for the employee to know his business, and you make it more certain that the customer will know what he should about you, and that he will no longer misunderstand you. An understanding customer is a satisfied and a profitable customer.

Any management realizes the futility of explaining to the general public the truth about the complicated matters which the exploiter usually selects as his subjects for attack; and well the exploiter knows this. But when we find that nearly all of the differences between customer and company center around questions which may be satisfactorily answered by any properly informed employee, the problem of public information and understanding is brought down to more reasonable dimensions.

One other fact seems obvious—and it, too, is important. Management cannot afford to take for granted knowledge on the part of its customers, even on the simplest or most commonplace subject. When so many individuals can be so completely wrong on points which to the expert seem elementary, executives must reconcile themselves to a continued program of enlightenment.

: *Additions to the Family* :

JANUARY 15—FEBRUARY 15, 1935

GAS COMPANIES

Delegates

Central States Power & Light Corporation of Oklahoma, Tulsa, Okla.....B. F. Pickard

ASSOCIATE COMPANY

Appalachian Coals, Incorporated, Cincinnati, Ohio.....R. E. Howe

MANUFACTURER COMPANIES

Athens Stove Works, Athens, Tenn.....F. O. Mahery
Brake Equipment & Supply Company, Chicago, Ill.....B. Pratt

INDIVIDUAL MEMBERS

Archer, Arthur A.....Pittsburgh Coal Company, Pittsburgh, Pa.
Billings, D. W.....Wisconsin Power & Light Company, Madison, Wis.
Burns, William Thomas.....Kings County Lighting Company, Brooklyn, N. Y.
Clement, William Ray.....Public Service Electric & Gas Company, Newark, N. J.
Fisher, Paul H.....Wisconsin Power & Light Company, Madison, Wis.
Gray, John J.....Wisconsin Power & Light Company, Madison, Wis.
Hainer, Fred W.....Wisconsin Power & Light Company, Madison, Wis.
Hayes, Leslie E.....Wisconsin Power & Light Company, Madison, Wis.
Hogan, Harry A.....Westchester Lighting Company, Mount Vernon, N. Y.
Holaday, Frank M.....Wisconsin Power & Light Company, Madison, Wis.
Johnson, A. D.....Wisconsin Power & Light Company, Madison, Wis.
Lillie, R. B.....Wisconsin Public Service Corporation, Milwaukee, Wis.
Kahn, Joseph.....Peoples Gas Light & Coke Company, Chicago, Ill.
Maguire, William J.....Philadelphia Electric Company, Philadelphia, Pa.
Penney, Jr., James William.....Boston Consolidated Gas Company, Jamaica Plain, Mass.
Pierce, Richard E.....Northampton Gas Light Company, Northampton, Mass.
Schulte, Elwood V.....Kings County Lighting Company, Brooklyn, N. Y.
Storey, Thomas G.....Central Illinois Public Service Company, Springfield, Ill.
Underkofler, R. C.....Wisconsin Power & Light Company, Madison, Wis.
Wolf, Clayton S.....National Fuels Corporation, New Haven, Conn.

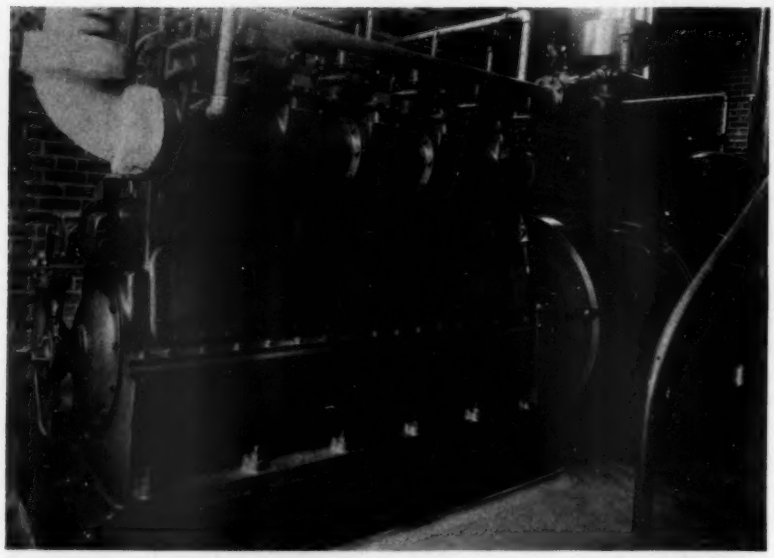
CANADA

Danes, A. J.....Northwestern Utilities Limited, Edmonton, Alb., Can.
Green, G. W.....Northwestern Utilities Limited, Edmonton, Alb., Can.
Imler, F. G.....Northwestern Utilities Limited, Edmonton, Alb., Can.
Jefferson, J. C.....Northwestern Utilities Limited, Edmonton, Alb., Can.
Mc Garvey, E. L.....Northwestern Utilities Limited, Edmonton, Alb., Can.
Milne, James T.....The Canadian Western Nat. Gas Lt. Ht. & Pr. Co., Ltd., Calgary, Alb., Can.
Nelson, Edward.....Northwestern Utilities Limited, Edmonton, Alb., Can.
Whelihan, J. B.....Northwestern Utilities Limited, Edmonton, Alb., Can.
Wiggins, C. E.....Northwestern Utilities Limited, Edmonton, Alb., Can.

Gas Engines for Power

By W. J. BRIGGLE, JR.

Industrial Department, Lone Star Gas Company, Dallas, Texas



150 H.P., 5 cylinder, BG-5 vertical gas engine, operating on natural gas, generating power for compressor and auxiliaries in ice plant

IT is a far cry from the first internal combustion engines, credited to Abbe Hautefeuille in 1678, to the modern engine of today. Hautefeuille conceived the idea of burning a small quantity of gunpowder in a chamber connected with a reservoir of water. After combustion, the gases were cooled resulting in a partial vacuum, and the water was raised from the reservoir by atmospheric pressure.

Interest on the part of manufacturers and gas men is rapidly accelerating as the gas engine looms up as a new answer to the make or buy power question. Furthermore the use of gas engines in the reverse refrigeration air conditioning cycle is also being considered. The gas engine can produce cheap electricity even at typical thermal efficiencies around 25% while applying the cooling water to help furnish building hot water supplies will utilize a large portion of the balance of the B.t.u. input.

While it cannot be said that the development of the internal combustion engine has been phenomenal, it has been sure and steady. It is to the untiring efforts of numerous investigators, whose judgment and foresight convinced them of the potential value of a commercial machine of this type, that we owe the success of the internal combustion engine of today.

In this internal combustion engine group, our remarks and theories shall be limited to the most important, the gas engine. Until recent years, the gas industry has been somewhat handicapped in its efforts to secure a diversified gas engine load due to the limited sizes and types of engines available. Through the cooperative efforts of manufacturers and the gas industry this handicap has now been overcome.

There are today five groups of gas engines which will meet any requirement from one to fifteen hundred horsepower.

In the first group, we have the comparatively new type of installation brought about through the successful conversion of automobile engines for stationary use to utilize natural gas fuel. This group contains all makes of automobile engines either new or used, and the conversion is accomplished by simply installing a gas designed carburetor and a governor to the engine. Operating experience shows that they will successfully handle loads from one to twenty-five horsepower, running from 600 to 1200 R.P.M. It is recommended, however, that the engine speed be regulated to or under 1000 R.P.M. This type of installation can be operated either as a generator unit or as a straight power unit, and there is an unlimited field for this small converted unit.

During the last three years 300 such installations have been made in properties served by the Lone Star Gas System. They may be found in grocery stores, filling stations, planing mills, laundries, creameries, hotels, cotton gin seed houses, water pumping plants, and various other commercial uses. This type of installation may consist either of used or new equipment.

Operating cost data on used automobile engine installations indicates that it is possible to amortize the initial cost of the equipment within a short period of time. Savings resulting from these installations are, in a number of cases, more than sufficient to install new equipment after about one or one and one-half years' operation. The savings over electric power on this type of unit are usually very high due to the prevailing electric rates for commercial service. Where the average K.W. cost is from 3 cents to 4 cents, a saving of 50% to 75% may be realized.

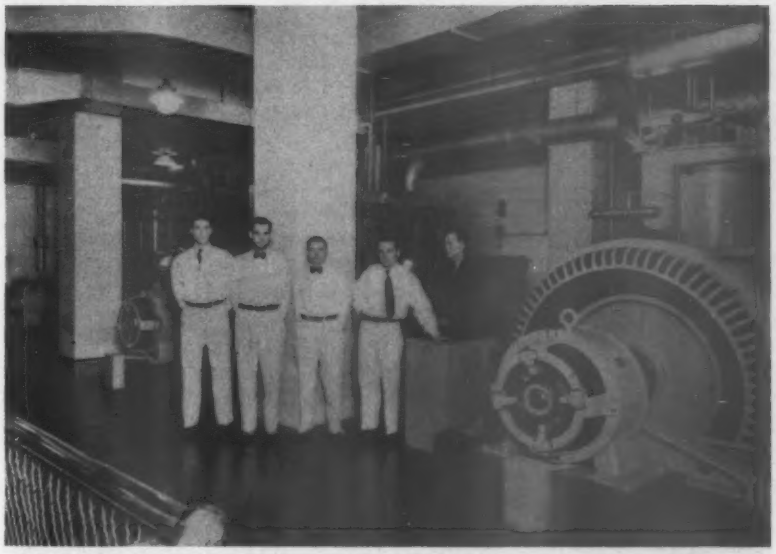
As evidence of the economical operation of the automotive type of installation, there is a grocery store on our lines using a 1924 Studebaker engine replacing a 7½ H.P. electric motor which formerly operated a 4 x 4 ammonia compressor and a small water pump. The electric cost for this service averaged $60.00 per month, and after the conversion to utilize natural gas, the cost was reduced by $40.00 for the thirty-day period. The initial cost was exceedingly low and it has been operating very satisfactorily for sixteen months. In addition

Paper presented before the Southern-Southwestern Regional Gas Sales Conference, Dallas, Texas, February 21, 1935.

to this installation, there are eight similar units in operation in various uses in this city and the combined gas load is equivalent to 100 domestic consumers during the summer period of operation.

In the second group will be found the high speed automotive type stationary engines. The horsepower range of this group is from 5 to 200 and they are of the vertical four cycle multi-cylinder type operating from 800 to 1200 R.P.M. This type of installation can be used either in commercial or industrial plants, and are very often installed by commercial establishments desiring a more elaborate and dependable plant than is offered by the converted automobile engine type.

For industrial service these units will be found in cotton gins, ice plants, feed mills, and general industrial plant operation. Probably the largest field for this unit in the South is in the cotton ginning industry. There is today one distributing company served by the Lone Star Gas System that has 80 cotton gins now using natural gas engines as prime movers, and probably 60% of this number use this type of engine. During the last few years cotton ginners have been faced with short crops and low cotton prices and this factor has forced them to seek a more economical source of power.



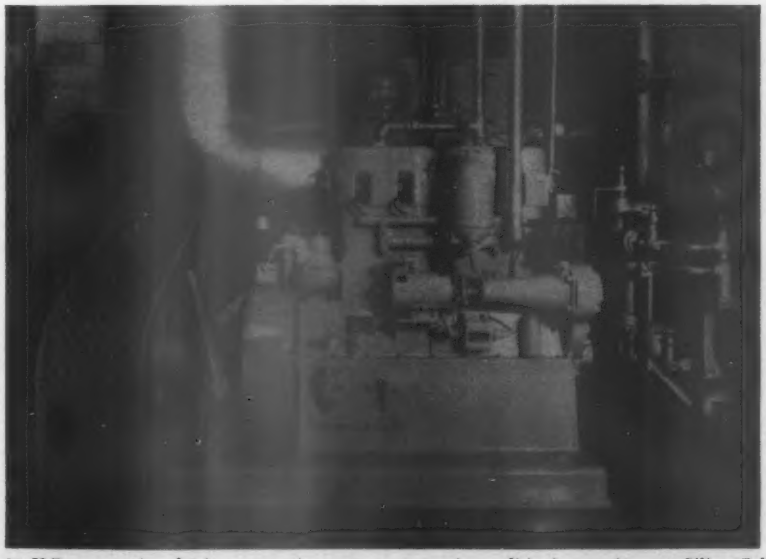
Three 165 H.P. gas engines direct connected to synchronous generators. Engines are 4-cylinder, heavy duty, slow speed. Waste engine heat is used to supply hot water for the building

The average cost for ginning cotton with electric power on the system of a Southern power company averaged 89 cents per bale last year. The cost per bale of gas engine driven cotton gins was 23.5 cents per bale for this same period on the lines of a natural gas distributing company in Texas. This cost included fuel, water, oil, and maintenance. The average cotton gin should amortize an engine installation within three seasons or less, and due to intermittent operation of this class of service, these installations should last for a number of years. Engines of this nature are being successfully used as standby units in ice plants.

During winter operation when it is not profitable to operate large units, a very economical operating cost is possible by installing one of the small engines of this group. We have an ice plant on our lines powered by a 140 H.P. and a 50 H.P. engine. During the winter months the small engine drives a 35 K.W. generator and this unit in turn takes care of the entire plant operation. With this arrangement this plant is able to maintain a low operative cost and to receive high operating efficiency on the engine. Their costs would be increased materially if they were forced to use the large unit in the winter months with this low load factor.

The third group is of the 4 cycle multi-cylinder vertical type engine operating from 400 to 675 R.P.M. and ranges from 45 to 200 H.P. These engines are of the semi-heavy duty type, and are successfully used in various industrial plants.

As an example of the dependability and durability of this semi-heavy duty type of unit, we have on our lines a gas engine driven twenty-ton ice plant using a 140 H.P. engine;



50 H.P. gas engine driving ammonia compressor on air conditioning equipment. Silica Gel gas dehydration unit in background

one side of the engine pulling two 7 x 7 ice machines connected by a clutch, with the fly wheel of the engine grooved and using a Tex-Rope drive to pull a 35 K.W. generator. The peak season of this plant is from May to the latter part of November. The plant is now in its third year of operation. The oil and gas consumption for this period has been remarkably low and repair cost negligible.

Last season this plant ran 4,476 hours without a shutdown, and the total cost for the manufacture of ice has averaged about 50 cents per ton, while the electric power cost per ton of ice will average approximately 85 cents. It is a very efficient plant, requiring an average of 1000 cu.ft. of gas per ton of ice produced. The average ice plant installation of this type should pay out in two to three years. This depends, however, upon the cost per ton of competitive types of power. Where the electric energy charge averages 2 cents per K.W. hour, a saving of from 35% to 50% may be expected.

Value of Ice Plant Load

From the standpoint of value to the gas industry, the ice plant load is unexcelled. During the summer months when gas sales are naturally at their lowest, these plants operate continuously and at a high load factor. It is my belief that the ice industry is one of the best fields on which gas companies can concentrate their effort for gas engine load. There are hundreds of ice plants throughout the country today which have been forced to cut their overhead in every possible manner, and there is only one way whereby any further appreciable saving can be realized and that is in their power cost. During recent years an ice war existed in a large Southern city, and it is a known fact that the electric driven plants lost considerable money, while gas engine operated plants experienced no appreciable loss.

The fourth group is of the 4 cycle multi-cylinder vertical type heavy duty engine operating from 257 to 300 R.P.M. and ranges from 55 to 1500 H.P. These units can be installed for all continuous operating industrial jobs. They are used chiefly in textile mills, cotton oil mills, flour mills, ice plants, municipal light plants, and all types of manufacturing plants. For reliable power service, this type of installation is most economical and efficient. As an example, a large garment manufacturing company in Texas installed a complete power plant several years ago and they have enjoyed a consistent saving, no material expenditures being made to this date for repairs. This is a complete electrical generating plant.

On large industrial installations, it is advisable to arrange the installation to carry as much of the load as possible direct from the line shaft, the remaining auxiliaries to be operated from a generator installed in conjunction with the same engine. With this arrangement the first cost is reduced to a minimum, and results in a more flexible plant throughout. Cotton oil mills and the textile industry offer a bright future for this type of engine. Where the average cost per K.W. is 1½ cents, a very appreciable saving can be effected.

It is well to keep in mind that on installations of this type a more flexible and reliable plant can be had by the use of two engines. Shutdown time has always been a factor used by competitive types of power as an argument to discourage the installation of gas engines. This shutdown period has been kept to a minimum by the use of one engine installation; yet it is well to consider the installation of an additional unit if the savings are sufficient to justify the additional unit.

Low First Cost

The fifth and last group is of the 2 and 4 cycle single and twin cylinder, also double acting twin tandem engines operating from 125 to 300 R.P.M. and ranging from 35 to 1500 H.P. In the past these engines have not received popular acclaim for industrial use, however, they are now receiving more favorable consideration. Only recently, two 150 H.P. 2 cylinder 300 R.P.M. engines of the 2 cycle type were installed in an ice plant, and while the operating efficiencies of these units are not quite equal to that of the 4 cycle vertical multi-cylinder type, these engines have been equipped with fuel economizers and it is believed that an efficiency of 11 cu.ft. of gas per horsepower developed at full load will be attained. This type of engine should prove very popular as the first cost is somewhat lower than the fourth group of heavy duty engines. As an illustration of the excellent performance of this type of unit, we have on our lines an 80 H.P. 2 cycle horizontal engine purchased in 1913. This engine is operating at 180 R.P.M., and at times has carried a 40 horsepower overload. This engine has been operating satisfactorily and without any appreciable amount of repairs for 16 years and is still in fairly good condition.

Advantages of Gas Engine Power

There are numerous advantages that can be enumerated to the prospective purchaser of gas engine power; such as elimination of fuel storage, paying for fuel when used and not in advance, cleanliness of engine rooms, simplicity of engine construction and long life of engines. Probably the most important feature to bear in mind is to secure accurately all data concerning the load requirements and then lay out the proper type of installation. Careful consideration must be given to the fact that practically all industrial plants increase their load by the installation of additional equipment from time to time, and unless engine horsepower in excess of the actual plant requirements is provided for at the time the engines are installed, an overload condition will result. The question of whether to provide one and one-quarter or two engine horsepower for each horsepower load required at time of installation of engines will depend entirely on load characteristics and possible plant expansion at a future date. Unless adequate power is provided at the time of the original gas engine installation, there is always a possibility that electric power will creep in when additional equipment is added to the plant at a later date.

This desirable gas engine load can be secured only by intensive sales work backed by sound engineering principles. Unlike other types of industrial loads, it is rarely necessary to decrease existing rates in order to at-

tach this business to our lines. It has been our experience that more gas engines have been sold during the last several years of curtailed industrial production than during periods of prosperity. What can be accomplished in securing gas engine installations with the return of normal business conditions, in my opinion, will depend entirely upon the intelligent sales engineering effort expended.

Miss Roth to Wed

Miss Emma Roth

ANNOUNCEMENT has been made of the engagement of Miss Emma A. Roth of New York to William G. Rogers of Cleveland. The wedding will take place March 17 in New York. After a month's trip the couple will make their home in Cleveland, where Mr. Rogers is treasurer of The East Ohio Gas Company.

As secretary to the managing director of the Association, Major Alexander Forward, Miss Roth has made a host of friends both within and outside of the gas industry. Her quiet efficiency and attractive personality will be keenly missed at Association Headquarters. Every member of the staff wishes her happiness in her new home.

Early in March, a dinner will be given by Major Forward in honor of Miss Roth.

Bridgeport Company Opens New Appliance Department

General view of attractive new sales floor

AFTER a lapse of some twenty-five years, the Bridgeport Gas Light Company, Bridgeport, Conn., again entered the appliance merchandising field January 30 with the pre-showing of the company's new appliance department and showroom. The official opening for the general public took place the following day.

The new showroom, which embodies the most modern ideas in architectural design and interior decoration, measures 40 ft. across the front, more than 50 ft. in depth, and has about 2200 sq.ft. in all. Exterior flood lighting is provided by six Humphrey super power gas lamps, each with about 3000 c.p., which were turned on shortly after the opening and attracted much favorable comment.

A feature of the display is Bridgeport's first model all-gas kitchen. It is scientifically designed and stressed the economy and beauty of modern gas appliances. The kitchen is set on a stage, 10 by 13 feet.

Ronald A. Malony, sales manager, who recently came from The Philadelphia Gas Works Company, heads the new department. George S. Hawley is president of the company. A staff of 15 will assist Mr. Malony in the sales department. Two men will specialize on house heating, two on hotel and restaurant business, and one on gas utilization in the heavy industries. Ten district men will have exclusive territories covering the city.

Kansas Municipal Plants Short of Gas

TWO widely celebrated municipal utilities of Kansas had service failures during the cold spell of the week of January 20. These two towns, Winfield and Chanute, have municipal gas systems supplied mostly from wells in local fields. No shortage of gas was reported from towns of the same general region supplied by the Cities Service Gas Company. In Winfield the gas shortage closed the city grade schools besides bringing discomfort to many families and business institutions. The "Winfield Courier" of January 21 said: "Winfield grade schools felt the pinch of cold and were closed as the gas pressure was low. . . . . All of the elementary schools in Winfield were closed all day Monday because the rooms could not be heated sufficiently to keep the children warm. . . . . The high school changed over from gas to coal Sunday afternoon."

The "Chanute Tribune" of January 21 printed a story more than one column in length telling of the gas shortage which caused "all to suffer" there. The "Tribune" said that it was necessary for families depending upon gas for heat to move in with their neighbors or friends who were using other fuels.

In contrast with these reports from municipal gas towns the "Eldorado (Kansas) Times" of January 24 said: "No complaints have been published in any town served by the Cities Service lines. . . . . It is a most comfortable situation to have plenty gas for fuel when one needs it most."

John Kohout Elected President

John Kohout

AT a meeting of the board of directors of the New York and Richmond Gas Company, held January 18, John Kohout was elected president of the company to fill the vacancy created by the death of William J. Welsh last September.

Mr. Kohout has been affiliated with the company since 1911 when he came to Staten Island from Rensselaer, New York, to serve as an accountant. Shortly thereafter he was made chief clerk and in 1917 was elected secretary and treasurer, in which capacity he continued until elected president. He has been a director of the company since 1932 and is also a director of the Staten Island Chamber of Commerce and of the St. George Building, Savings and Loan Association.

Baking Characteristics of Gas and Electric Ranges

By R. M. CONNER
Director, A. G. A. Testing Laboratory

FOR a number of years proponents of both gas and electric ranges have made numerous claims for uniformity of baking, lack of food shrinkage, and many other features of oven performance affecting all-'round baking satisfaction. One of the most complete studies ever conducted on this subject has recently been concluded by the American Gas Association's Testing Laboratory and it is expected the results will shortly be available. In order that the results obtained should be accurate and conclusive the most modern types of appliances available were utilized and home economics experts were employed to conduct the cooking tests.

Baking Variables

Few people outside of those actually engaged in the bakery business realize how many different variables there are affecting the results which may be obtained during the normal food baking processes. Even the most experienced artisans in this field do not agree on a great many important points. This fact no doubt accounts to a large extent for the differences in appearance and palatability of various baked products, where in many instances the ingredients and manner of preparation are exactly the same. Is it little wonder, then, that the housewife often experiences variable results following as she does a hit or miss policy in her various mixing processes. It is logical to assume from a scientific standpoint that where like mixtures are similarly prepared and the actual baking processes carried out under identical conditions, similar results should always be obtained. If this situation were actually true, undoubtedly similar results would be the case. However, actual differences in finished baked products, aside from variations in mixtures and baking methods often arise from the manner in which heat is supplied to the baking chamber. It is this latter item which the writer wishes principally to discuss.

In several respects the performance of gas and electric range ovens is fundamentally different. One of the most important variations is the fact that electric ranges depend very largely for their effectiveness upon radiant heat, while gas ranges utilize convected heat almost entirely. Although both methods of application possess certain distinct advantages, tests show that for all-'round baking purposes an oven utilizing the latter method of heat application will produce the best results.

While gas and electric range ovens depend for their successful performance upon the application of both convected and radiant heat, the former types depend almost entirely on convected heat and the latter largely on heat of the radiant type. Although there are numerous variations in design, ordinarily speaking these general classifications will hold.

Radiant heat travels at practically the same intensity in all directions from its source. Its intensity varies inversely with the square of the distance from its source, which means that products placed at different distances from it will be differently affected. Moreover, the intensity varies as the fourth power of the temperature difference between the source and load. It is apparent, therefore, that if every portion of all surfaces of an oven load were to receive the same amount of heat by radiation, it would be necessary to make provisions for a spherical source of uniform intensity.

Contrasted to this decidedly hypothetical condition, we find that the average electric range, during a baking period, actually affords only one intense radiant heat source. The oven load, therefore, receives considerable heat on the side facing this source (next to the heating element) and comparatively little heat on the other sides. This condition is analogous to that found on a warm summer day when going from the sunny to shady side of a house. Tests previously mentioned apparently confirmed the contention that uneven heat distribution

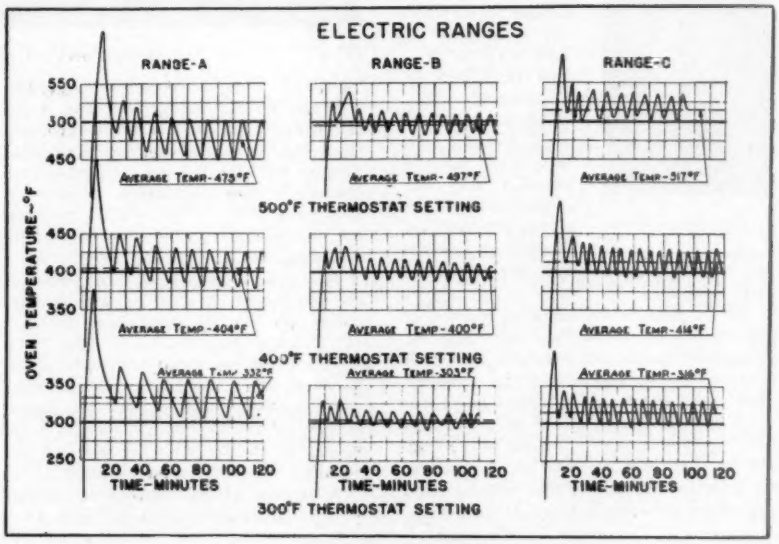


Figure 1
Oven temperature control and thermostat calibration characteristics for electric ranges

of the kind prevailing in electric ovens tends to produce unsatisfactory baked goods.

Convected heat supplied by gas range oven burners provides, on the other hand, a heating medium of uniform temperature which entirely envelops the oven load. Heat is, therefore, imparted uniformly to all sides of the product or utensil, thereby assuring uniform baking results. The rapidly circulating air and other colorless, odorless, gases passing through the oven also eliminates the possibility of a stagnant atmosphere about the load. Thus, meat roasted in a gas oven will be truly roasted and not partially broiled as might otherwise be the case.

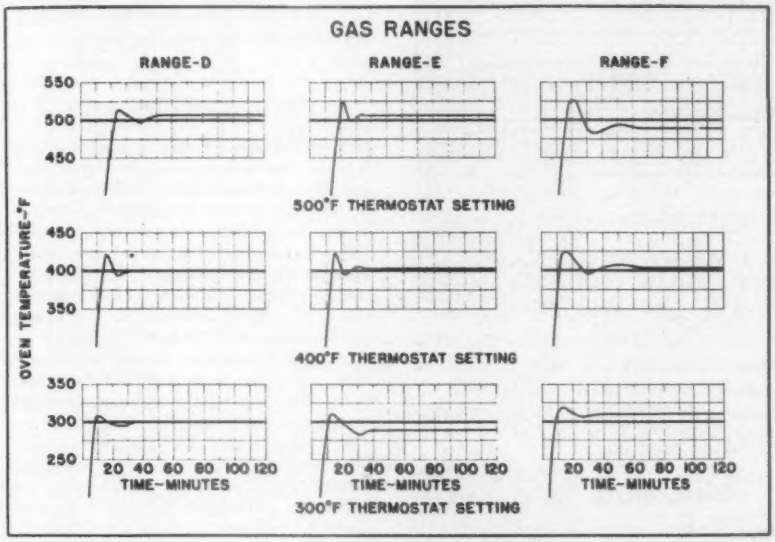


Figure 2
Oven temperature control and thermostat calibration characteristics for gas ranges

Analysis of the foregoing differences in heat transfer conditions in electric and gas range ovens indicates that they were largely responsible for the general superiority of products baked in gas ovens observed during our investigations.

Another pronounced difference between gas and electric ovens, in addition to heat distribution, is found in the uniformity of temperature control afforded. Gas ranges are usually equipped with graduating types of thermostatic control. Devices of this nature regulate the fuel supply in such a manner that inputs are proportional to the difference between the temperature setting on the thermostat dials and the temperature within the baking chamber. They are, therefore, quite sensitive and usually afford extremely accurate and uniform temperature regulation.

Contrasted with this situation we find electric ranges supplied with snap-acting temperature controls, which means that the amount of energy supplied is either full "off" or full "on." As a result, the electric range oven temperatures vary in periodic cycles, the extremes of which differ by as much as 50° F. This contrast between gas and electric oven performance is best brought out by reference to Figures 1 and 2. It will also be seen from these curves that the "over-shoots" were generally considerably greater for electric ranges than for gas. Sensitive kinds of pastry, such as cookies, are usually adversely affected by such variations. Other classes of baked products are undoubtedly similarly affected, although on account of their nature they cannot be expected to indicate it to such a marked extent.

Recent tests conducted not only by our Laboratory, but elsewhere, indicate quite conclusively that food shrinkage is largely a function of the temperature carried in the baking chamber and not at all of the type of fuel. The only wonder is that this has not been universally recognized. It is to be expected that a revolutionary change will take place in some of our old established cooking processes when it becomes more generally known that high temperatures are largely responsible for excessive meat shrinkage.

The results secured during our shrinkage tests showed that roasts lost slightly less weight in gas than in electric ovens. In view of the great influence exerted by temperature, it is not unlikely that the more favorable record of gas ovens was due to their more uniform heat distribution and superior temperature control characteristics.

Ultimate oven efficiency has apparently never been given a great amount of consideration by either gas or electric range manufacturers. There are a number of reasons for this fact, the first and probably the most important of which is that engineers have not as yet agreed upon a standardized method for determining it. Nevertheless, this item does play quite an important part in influencing operating costs, particularly when considered over a period of years. All manufacturers could, with advantage, give greater consideration to this subject.

Electric Range Efficiencies Decrease

Figure 3 has been prepared to indicate the decrease in efficiency of electric range top heating elements with continued usage. Tests conducted by the Association's Laboratory, as well as the National Bureau of Standards, indicate on the other hand that the efficiency of gas range burners does not decrease appreciably with age. Consequently, it may be assumed that whatever the relative efficiencies of gas and electric ranges are initially, the effectiveness of electric range top heating mediums grows comparatively less from year to year. What the exact effects of a similar gradual decrease in the efficiency of over heating elements would have on baking characteristics are not known. It seems only reasonable to assume, however, that such decreases should eventually prove detrimental to the users' interests.

Summing up the various gas and electric range oven baking characteristics from the previous discus-

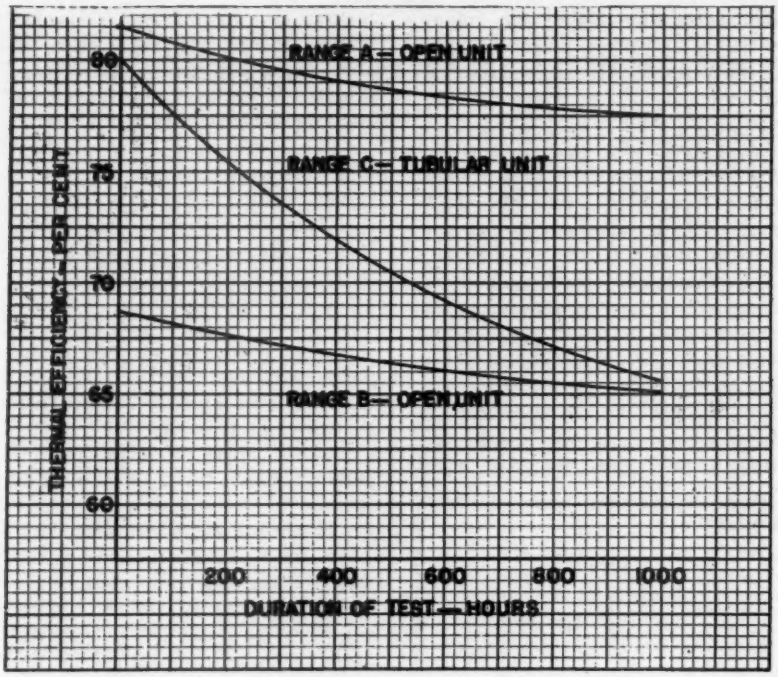


Figure 3
Effect of continued operation on thermal efficiencies of electric range top elements

sion, warrants the following general conclusions:

1. Electric ranges rely to a much greater extent on radiant heat for baking than do gas ranges. It is believed that this method of heat application results in uneven temperature distribution and, consequently, accounts to a large extent for the less uniform baking results obtained in electric range ovens.

2. Temperature regulation of electric range ovens is rather ineffective, readings varying as much as 50 degrees Fahrenheit for certain dial settings. This condition may result in less uniform baking, particularly for foods sensitive to comparatively slight temperature changes.

3. It is believed that the more uniform heat distribution and temperature control characteristics of the gas oven may have accounted for the slightly less shrinkage observed with this type of oven during the previously mentioned tests.

4. Continued operation tests on electric range top heating elements indicate not only marked reductions in efficiency with continued usage but leave one to suspect that other defects previously mentioned might be accentuated with age.

5. An analysis of all related factors indicates that the gas range oven not only bakes more uniformly, affords more accurate temperature regulation, but actually results in slightly less food shrinkage than is found during use of an electric range.

Skit Contest Sponsored

SKITS have been found such an excellent method of promoting interest in gas and gas appliances that the Home Service Committee of the American Gas Association is sponsoring a skit contest among employees of gas companies. The contest will be under the supervision of Ruth Soule, The Brooklyn Union Gas Company; and Margaret Nevins, The Syracuse Lighting Company, Inc., chairman of the Home Service Committee.

Rules of the contest provide that any employee of any member gas company is eligible to enter the contest. Subjects of the skits are to cover the use and advantages of gas ranges, water heaters, refrigerators and heating appliances. Also eligible are subjects on special services, such as home modernization, home calls and miscellaneous home service activities. The length of skits is to be limited to 30 minutes.

Cash prizes will be awarded as follows: first prize, $15.00; second prize, $10.00 and third prize, $5.00. The winning skits will be determined by impartial judges selected by the Home Service Committee.

All skits must be mailed to Home Service Counsellor, American Gas Association, 420 Lexington Avenue, New York City, and must be postmarked not later than midnight of April 30, 1935.

C. W. Gale Is Promoted

CHARLES W. GALE, superintendent of the industrial gas, commercial gas and district steam heating division of the Denver new business department of the Public Service Company of Colorado, has been promoted to new business manager of the Knoxville Gas Company, Knoxville, Tenn. Mr. Gale succeeds Edwin J. McGlinchey who has been chosen to replace Herbert C. Porter as new business manager of the St. Joseph Railway, Light, Heat & Power Co. Mr. Porter has been chosen as new business manager of the Kansas City Gas Company.

Mr. Gale joined the Doherty organization in 1923 as industrial fuel sales engineer for Public Service Company of Colorado at Denver. In 1927, he was placed in charge of Denver's industrial gas division. Mr. Gale's experience includes the solution of problems in connection with the changing over on a large scale from manufactured to natural gas.

Mr. Gale has been active in the work of the American Gas Association and is vice-chairman of the Industrial Gas Section.

Speakers Being Chosen for Housing Program

THE American Gas Association, at the request of B. J. Flynn of the Federal Housing Administration, is cooperating to secure speakers for a series of semi-monthly evening meetings in approximately 100 cities throughout the United States. The meetings, beginning February 1, will be sponsored by the local Better Housing Committees.

J. W. West, Jr., gas industries advisor for the Federal Housing Administration, who has been active in securing state liaison officers to cooperate with the Housing Administration, is arranging for the availability of a speaker from the gas industry whenever this is desired by the local committee.

The purpose of the meetings is to give to the contractor, dealers and distributors in every line of the building equipment and construction field the sales ammunition necessary to capitalize upon the Better Housing Program. Speakers are being chosen for their inspirational ability as well as for their experience in cooperating with the program.

Gas Measurement Course To Be Held in April

THE Southwestern Gas Measurement Short Course, held annually at the Engineering Building of the University of Oklahoma at Norman, Oklahoma, will be held this year on April 23, 24 and 25. The dates were selected by the general committee in a meeting at Norman, January 21, and plans were made for the program for the 1935 course.

University professors and representatives of manufacturers of gas measurement equipment conduct the short course each year for the benefit of members of the natural gas industry charged with responsibility of measurement of gas. Classes are open also to engineering students of the university who take advantage in large numbers of what the opportunity offers.

Registration at the 1934 course was 390 and was representative of 17 states and four foreign countries, the latter being Argentina, Belgium, England and Persia.

President W. B. Bizzell of the University of Oklahoma and J. H. Felgar, Dean of Engineering, give the course their enthusiastic endorsement and cooperation, while Professor W. H. Carson of the engineering faculty is active director of the course. The purpose of the project is to increase the accuracy of measurement and the efficiency of regulation for the better serving of the public, more accurate and equitable adjustment of purchase and sale of natural gas and the dissemination through the industry of correct information regarding the highly technical engineering problems involved.

The program for the 1935 course is being arranged by a committee under chairmanship of R. D. Turner of Tulsa. It will be announced in detail early in March. D. C. Williams of Ponca City is chairman of the general committee for 1935. The subcommittee chairmen are: W. H. Carson, Norman, banquet, entertainment and arrangements; G. W. McCollough, Bartlesville, exhibits; Ray Roundtree, Houston, Texas, study of practical methods; Max Watson, Amarillo, publications and E. F. McKay, Oklahoma City, registration.

Other members of the 1935 general committee are: W. R. McLaughlin, Gilbert Estill, Ray E. Miller, W. F. Lowe, J. H. Satterwhite, G. B. Lane, B. L. Maulsby, and L. G. Rheinberger of Tulsa; E. E. Stovall, A. E. Higgins and D. A. Sillers of Dallas; G. P. Bunn, V. C. Jarboe and F. D. Franks of Bartlesville; Fay C. Walters of Kansas City, Mo.; E. A. Clark of Pittsburgh, Pa.; Earl Kightlinger, Shreveport, La.; John H. Baxter of Ashland, Ky.; C. B. Day of Blackwell, and B. P. Stockwell and E. F. McKay of Oklahoma City.

Judge Caster Made a Director

JUDGE H. O. CASTER, a member of the executive committee of Henry L. Doherty & Company, and a former president of the American Gas Association was elected a director of the Kansas City Gas Company at the annual stockholders' meeting held January 17. Judge Caster succeeds W. S. McLucas, formerly an official of the Commerce Trust Company in Kansas City and now president of the National Bank of Detroit at Detroit, Mich.

McCarter Medals Awarded

G. Scandone

GEO. SCANDONE and Francis J. Horner, employees of the gas distribution division of the Philadelphia Electric Company, who performed acts of heroism recently in reviving a victim of gas asphyxiation, were awarded a McCarter medal and certificate and a certificate of assistance respectively for their quick and effective action.

The McCarter medal is awarded for the successful application of the Schafer prone pressure method of resuscitation and is made possible by the generosity of Thomas N. McCarter.

F. J. Horner

The presentation was made February 5 by A. M. Boyd, manager of personnel, claims and safety, in the Broadwood Hotel before nearly 2000 employees.

The accident which led to the awards occured July 9, last, when Mr. Scandone and Mr. Horner found a man overcome by gas in a bathroom. They immediately applied the prone pressure method of resuscitation and continued applying it while the man was being taken to a hospital. As a result of their quick action, the victim completely recovered.

R. M. Goodwin is director of safety for the Philadelphia Electric Company.

Bert Smith, an employee of the Wheaton District of the Western United Gas and Electric Company, Aurora, Illinois, has been presented with a McCarter medal for conspicuous work in life saving. The presentation was made by George R. Jones, president of the company, during a party, which was held at the Aleon Ballroom in Aurora, with an attendance of 1000 people.

In making the presentation, Mr. Jones expressed his appreciation and thanks to Mr. Smith for the great service he had performed and further expressed a desire that each and every employee of the company at all times keep in condition to perform the prone pressure method of resuscitation should the occasion arise.

New High Temperature Combustion Bulletin

THE second bulletin on Project No. 26, "Research in the Effect of Operating Temperatures on the Combustion of Industrial Gas," has just been published by the American Gas Association. This bulletin which reports numerous phases of one of the projects sponsored by the Committee on Industrial Gas Research, F. J. Rutledge, chairman, also includes a chapter devoted to practical explanations on newly developed combustion knowledge.

Data in the bulletin represent original research work approached from the standpoint of public utility gas combustion. The bulletin contains 78 pages and includes curves and charts to make the subject readily understandable.

In a summary of the data established during this research, the material is discussed under the following headings: Fundamentals of Combustion, High Temperature Burners, Combustion Air Temperature, Combustion Chamber Wall Temperatures, and Fuel Gases.

This project is the sixth in a series conducted at the A. G. A. Testing Laboratory by the Committee on Industrial Gas Research for the purpose of increasing the industry's useful knowledge of high temperature combustion.

New Coke Oven Construction

PUBLIC Service Electric and Gas Company has just awarded The Koppers Construction Company of Pittsburgh a contract for the construction of an addition to the Camden Coke Works. This addition consists of 37 Koppers Becker type by-product coke ovens with an aggregate daily capacity for carbonizing 600 tons of coal and producing therefrom gas, coke, tar and ammonium sulphate. In addition certain other auxiliary construction was awarded designed to integrate the new work with the existing plant.

Certain features of the plant are noteworthy. The total production of domestic manufactured gas will reach a maximum of approximately 13,000,000 cu.ft. per day.

Affiliated Association Activities

Mid-West Gas Association

THE Mid-West Gas Association, covering the states of Iowa, Nebraska, Minnesota, North Dakota, and South Dakota, is completing plans for its thirtieth annual convention, which is to be held at the Hotel Fontenelle, Omaha, Nebraska, April 15-17. Frank H. Brooks, first vice-president, is in charge of the program which will include a variety of subjects and many speakers of prominence.

Topics of general interest on the program include the following: Progress and Trend of the Natural Gas Industry; The Manufacturer, Utility and Dealer Relations; Improvement in Customer Appliances and Work of A. G. A. Laboratories; The Mid-West Gas School and Conference; Cooperative Range Campaigns; Flood Lighting; Air Conditioning; Refrigeration Sales Plans, and the various phases of House Heating. On this latter subject, C. A. Nash will present a resumé of the A. G. A. program and also a discussion of the principles of mass selling.

Subjects of a more technical nature for which speakers have been selected are: Use of Natural Gas in Omaha To Carburet Blue Water Gas to 550 B.t.u., by C. D. Robison; Use of Natural Gas in Minneapolis To Carburet Blue Water Gas to 800 B.t.u., by Lester J. Eck; and Conversion of Customer Appliances for Higher B.t.u. Gas, by W. E. Steinwedell. Also to be considered are the characteristics of natural gas versus manufactured gas as relating to leakage and other problems of distribution.

The annual Stag Banquet, which has always been an outstanding feature of the meeting, will be held on the evening of April 16.

C. T. Williams, president of the Mid-West Gas Association, will preside at the convention.

New England Gas Association

ATTENDED by more than 400 utility men, the ninth annual business conference of the New England Gas Association held at Boston, February 14-15, was a conspicuous success. The meeting brought out many excellent papers and provided a cross-section of all phases of the industry's activities.

New officers elected at the meeting are: president, R. H. Knowlton of Hartford; first vice-president, F. L. Ball of Boston; second vice-president, R. L. Fletcher of Providence; and treasurer, F. D. Cadwallader of Boston.

The annual report by Clark Belden, executive secretary of the Association, showed that during the past year 28 new members were added, giving the Association a total of 6 holding company members, 81 gas company members, 82 manufacturer company members, 7 associate company members and 641 individual members.

The first business on the program was the presentation of the various awards made for meritorious work during the year. R. L. Fletcher, of the Providence Gas Company, outlined the year's awards. Winners of the sales contest awards were: Newport, with a record of 5.44 range sales per 100 domestic meters; Greenwich, with 7.01 automatic water heaters per 100 domestic meters; Buzzards Bay Company, with 2.13 tank water heaters; and Portsmouth, with 2.32 refrigerators per 100 domestic meters.

First award in the most valuable papers awards for the operating division went to R. L. Presbrey, Boston Consolidated Gas Company. John F. Wood, Lowell Gas Light Company, took first award in the sales division; Stuart F. Morgan, New Bedford Gas and Edison Light Company, first award in the industrial division; and H. W. Greenhalgh, New England Power Association, first award in the accounting division.

The "idea" contest, established for the first time this year, was won by Charles W. Caldwell, Beverly Gas and Electric Company. Wirt F. Kimball, Cambridge Gas Light Company, received the gas utilization report award.

The work of the New England Gas Association during recent years was reviewed by President F. M. Goodwin, Boston, in an address entitled "The Year's High Spots." Mr. Goodwin called attention to the trend during the past decade which has resulted in gas company executives becoming more sales minded in addition to their traditional engineering viewpoint.

Representatives of the American Gas Association on the program included P. S. Young, president; Major Alexander Forward, managing director; and Miss Jessie McQueen, home service counsellor. In the absence of Mr. Young, his address dealing with the fundamental problems of the gas industry, was read by Kurwin R. Boyes, secretary of the Association. Major Forward spoke on the increasing importance of the legitimate trade association under present conditions. Miss McQueen made an impressive presentation of the contribution to industry progress being made by the home service workers in various utilities. In addition, Charles A. Harrison,

Convention Calendar

MARCH

7- 8 **Pacific Coast Gas Association Spring Technical Conference**
Los Angeles, Calif.

12-13 **Oklahoma Utilities Association**
Oklahoma City, Okla.

14-15 **Pacific Coast Gas Association Spring Sales Conference**
Los Angeles, Calif.

22 **Hotel and Restaurant Sales Symposium**
Palmer House, Chicago, Ill.

28 **New Jersey Gas Association**
Walt-Whitman Hotel, Camden, N. J.

APRIL

15-17 **Mid-West Gas Association**
Hotel Fontenelle, Omaha, Nebr.

22-26 **American Chemical Society**
Hotel Pennsylvania, New York, N. Y.

25-26 **Missouri Association of Public Utilities**
President Hotel, Kansas City, Mo.

Apr. 29-May 2 **U. S. Chamber of Commerce**
Washington, D. C.

MAY

1- 3 **Natural Gasoline Association**
Hotel Tulsa, Tulsa, Okla.

2- 4 **A. G. A. Distribution Conference**
Cleveland Hotel, Cleveland, Ohio

6- 9 **Natural Gas Department, American Gas Association**
Hotel Peabody, Memphis, Tenn.

6-10 **American Water Works Association**
Netherland Plaza Hotel, Cincinnati, Ohio

7- 9 **Pennsylvania Gas Association**
Lodge at Skytop Club, Skytop, Pa.

13-14 **National Fire Protection Association**
Biltmore Hotel, Atlanta, Ga.

13-14 **A. G. A. Joint Committee Conference of the Production and Chemical Committees**
Hotel New Yorker, New York, N. Y.

JUNE

3- 6 **Edison Electric Institute**
Mayflower Hotel, Washington, D. C.

10-11 **Canadian Gas Association**
Quebec, Canada

24-28 **American Home Economics Association**
Chicago, Ill.

24-29 **American Society for Testing Materials**
Book-Cadillac Hotel, Detroit, Mich.

OCTOBER

14-18 **American Gas Association**
Atlantic City, N. J.

14-18 **National Association of Railroad and Utilities Commissioners**
Nashville, Tenn.

NOVEMBER

11-14 **American Petroleum Institute**
Biltmore Hotel, Los Angeles, Calif.

chairman of the Technical Section, presented a paper on "Technical Problems of the Gas Recovery Program."

Space does not permit a summary here of the many important contributions to this exceptional conference and the reader is referred to the New England Gas News and the trade press for further information.

New Jersey Gas Association

AT the annual meeting of the New Jersey Gas Association to be held March 28 at the Walt Whitman Hotel in Camden, officers will be elected and reports of the activities of various committees of the Association during the past year will be presented.

Percy S. Young, president of the American Gas Association and vice-president in charge of finance, Public Service Electric and Gas Company, is scheduled to address the meeting. Mr. Young will be introduced by Alexander Forward, managing director of the American Gas Association.

Other speakers on the program are: Thomas E. Colleton, assistant state director of the Federal Housing Administration; Davis M. DeBard, of Stone and Webster, Inc.; I. W. Peffly, vice-president of the American Stove Company, and L. C. Harvey, vice-president of The Bryant Heater Company.

Oklahoma Utilities Association

L. B. Denning

L. B. DENNING of Dallas, Texas, president of the Lone Star Gas Company and vice-president of the American Gas Association, will be among prominent utility leaders to address the Oklahoma Utilities Association at its seventeenth annual convention to be held in Oklahoma City at the Hotel Biltmore, March 12 and 13. Mr. Denning will discuss present-day problems based on thirty-three years of active experience in the natural gas industry.

The Oklahoma Association is representative of all branches of the utility industry and the convention program has been prepared with this fact in mind.

The great Tennessee Valley Authority project will have an important place in the discussions scheduled. R. D. Cockrell of Oklahoma City has spent several weeks since Christmas making first-hand observations in the "Seven Valley States" and will present conclusions that will be of vital interest and importance.

Dr. N. E. Winters of Stillwater, Oklahoma, whose research in problems of soil won him a Ph.D. at Cornell, now in charge of soil erosion work in Oklahoma, will give his ideas of true conservation.

George A. Davis of Oklahoma City, vice-president of the Oklahoma Gas and Electric Company, will talk about government activities which seem to border closely upon, if not to out-do, so-called propaganda activities of the utility industry.

Charles W. Person of New York City, director of publicity and advertising of the American Gas Association, will mention legislative measures affecting the utilities, pending or enacted in many states.

There will be a Ladies' Luncheon at noon, March 12, addressed by Miss Anne Barnes, Des Moines, Iowa, of the United States Independent Telephone Association, whose subject will be "Unknown Builders." Miss Barnes is widely known as a speaker and writer. The annual convention dinner will be held on the evening of March 12 with Professor W. A. Irvin of Topeka, Kansas, economic professor at Washburn University, as principal speaker.

These are some of the highlights of the program, which will interest the student of utility problems of the day.

The annual election of officers will be held March 13. H. B. Cobban of Miami, general manager of the Northeast Oklahoma Railroad Company, is president; W. B. Head, Jr., Sand Springs, president of the Oklahoma Power and Water Company, is first vice-president; and C. A. Breitung, Ada, Oklahoma, manager for the Southwest Gas Utilities Company, is second vice-president. W. R. Emerson and E. F. McKay of Oklahoma City are treasurer and manager respectively.

Pennsylvania Natural Gas Men's Association

AT the regular monthly meeting of the Pennsylvania Natural Gas Men's Association, held in Pittsburgh, Pennsylvania, on February 12, a paper on "Trends of Industrial Natural Gas Sales in Western Pennsylvania" was presented by J. P. Brosius, supervisor of industrial gas sales of the Equitable Gas Company. In his paper Mr. Brosius reviewed factors that influence the maintenance of the industrial gas load in natural gas territories, as well as some of the difficulties encountered in acquiring additional load in this territory.

Mr. Brosius' paper was supplemented by twenty-one slides illustrating some of the unusual and interesting applications of industrial gas in the Pittsburgh district.

About thirty members of the local Association attended the meeting, in addition to ten visitors. It was the fifth of the series of monthly meetings held this season by the local association. Previous meetings of this season discussed subjects of considerable importance and current interest, and included the following: "Economical Field and Compressor Station Operation," "Influence of Current Economic Trends on the Future Price of Natural Gas," "Possibilities of Using Natural Gas as a Raw Material in the Chemical Industry," "What They (the customers) Ask and What We Tell Them."

The regular program schedule calls for three more meetings to complete the 1934-35 season. The year's activity for the Association closes with a golf party and outing during the early part of June.

Employees Honored for Long Service

MORE than sixteen hundred employees and executives of the Consolidated Gas Company of New York and its affiliated companies were present at the annual dinner of the Quarter Century Club held in the Grand Ballroom of the Waldorf-Astoria Hotel on the evening of February 7. A total of 263 employees, who last year completed twenty-five years of service with the companies, were received into the club and special emblems were presented to each of five employees who had completed fifty years of service. In addition silver and bronze medals and honorable mention certificates were presented to 87 employees as awards for meritorious service.

The active membership of the Quarter Century Club now exceeds seventeen hundred, and fourteen of this number have service records of fifty years or more. Among the new members of the Club are President George B. Cortelyou of the Consolidated Gas Company and Colonel John Stilwell, vice-president.

Emblems were presented to their recipients by Colonel Oscar H. Fogg, vice-president, and Floyd L. Carlisle, chairman of the board.

Minneapolis Change-Over

The change-over from manufactured gas to a new mixed gas started recently in Minneapolis, Minn. "Conversion of customers' burners will be done by the district gas pressure method," said J. K. Swanson, vice-president and general manager of the Minneapolis Gas Light Company. Crews will visit each home and adjust each gas burner so that it will efficiently use both the present gas and the new gas. This applies to gas ranges, water heaters, refrigerators, gas furnaces and all other gas burning appliances. When all districts have been converted the new gas will be put into use under the new rates. The new gas, natural and manufactured, is to be of 800 B.t.u. as against the present 500 B.t.u.

Nation-Wide Gas Range Sales Contest

WITH a goal of $30,000,000 in retail gas range sales from March 1 to June 30, the American Gas Association through its Domestic Range Committee, announces a concerted nation-wide effort to increase the quantity and quality of gas range sales during 1935.

The figure of $30,000,000 is based on an objective of 500,000 gas ranges of all classes to be sold during the peak period of March 1 to June 30. This is 37.6% of the quota set by the American Gas Association for the entire year of 1935. Last year 300,000 ranges (31.5% of the year's total) were sold from March 1 to June 30.

In planning this campaign the committee realized that the sale of gas ranges is not merely in competition with cooking appliances using other fuels but with all other things that people are importuned to buy. Overwhelming publicity and high pressure selling of automatic refrigerators, automobiles, radios, washing machines, vacuum cleaners and, in fact, everything that a housewife may want to buy has during recent years pushed the gas range too far into the background. Purchases of other articles usually mean postponing the buying of a new gas range.

This nation-wide gas range contest is open to all gas companies which in order to give equal opportunity to all, large or small, will be classed in six divisions as follows:

Division I —All companies having more than 100,000 domestic meters
Division II —All companies having 50,001 to 100,000 domestic meters
Division III—All companies having 20,001 to 50,000 domestic meters
Division IV—All companies having 5,001 to 20,000 domestic meters
Division V —All companies having 1,001 to 5,000 domestic meters
Division VI—All companies having 1,000 OR LESS domestic meters

Because of the recognized importance to the industry of completely equipped ranges, only fully insulated, fully enameled ranges with oven heat control and automatic top-burner lighting, A. G. A. approved, will be counted in the contest.

A total of eighteen company awards and sixty-six individual cash prizes, totalling nearly $9,000 will be distributed among the winning contestants. To the three companies attaining the highest score in each division (computed on the basis of dollars and cents value of range sales per domestic meter on each company's lines) will be given beautiful loving cups, plaques or other tokens suitably inscribed.

Cash prizes ranging from $250 down will be awarded in each division to the individual sales people in the territories of the winning companies who achieve the highest records; these individual cash prizes are open to sales people both of the gas companies and of dealer organizations in the territories.

The dealer is recognized as a very important factor in the success of this contest since he is responsible for 65% of the total of all gas ranges sold. Therefore he is encouraged and urged to cooperate with the gas company in his territory in this concerted effort to increase gas range sales. Every gas company entering in the contest will have definite plans for tying in the dealer so that he may participate fully in the benefits of the contest, both from the possibility of winning cash prizes as well as in the larger profits from the increased sales that will result. Any dealer interested can secure full details from his local gas company.

TABLE OF CASH AWARDS

Division I

First Prize	$250.00
Second Prize	150.00
Third Prize	100.00
Fourth Prize	60.00
Fifth Prize	50.00
Sixth Prize	40.00
Seventh Prize	25.00

Division II

First Prize	$250.00
Second Prize	150.00
Third Prize	100.00
Fourth Prize	60.00
Fifth Prize	50.00

Division III

First Prize	$250.00
Second Prize	150.00
Third Prize	100.00
Fourth Prize	60.00

Division IV

First Prize	$250.00
Second Prize	150.00
Third Prize	100.00

Division V

First Prize	$250.00
Second Prize	150.00

Division VI $250.00

The individual sales people who score highest in each company's territory, whether the company received an award or not, will be presented with a handsome and appropriate lapel button.

There is a registration fee for utilities entering the contest but no fees are to be charged to dealers or individual sales people of utilities or dealers.

Contestants are privileged to pick out any sixty-day period for their contest between the limits of March 1 and June 30, 1935. The sixty-day period selected need not be *consecutive* but can be divided as desired within the limits of March 1 to June 30.

Model "Early American" Kitchen

The "Early American" kitchen pictured above is one of the outstanding new exhibits shown in the 1935 Salon of Modern Kitchen Styles, sponsored by The Philadelphia Gas Works Company, which opened January 21

ACCOUNTING SECTION

A. S. CORSON, Chairman H. W. HARTMAN, Secretary F. L. GRIFFITH, Vice-Chairman

Accounting Committees Hold Organization Meetings

FOUR of the principal committees of the Accounting Section, namely, the Office Management, General Accounting, Customers' Accounting and Customer Relations Committee, have held their organization meetings and are proceeding with the work which they have undertaken for the current year. A brief summary of the organization meetings of these committees follows.

Office Management Committee

The Office Management Committee of the Accounting Section, in deciding upon two projects for research, upon the subjects for five articles for the A. G. A. MONTHLY, and upon one or more subjects to be discussed at the Luncheon Conference at Atlantic City, got off to a flying start at its organization meeting at A. G. A. Headquarters on January 26.

A. S. Corson, chairman of the Accounting Section, and H. W. Hartman, secretary, were present in addition to nine members of the committee.

The first of the two projects decided upon is an analysis of office routine, for the purpose of proposing methods of periodical analysis of all branches of office work; the second is a study of correspondence manuals, the decision to undertake it being made because of the current need for effective and courteous letters to customers. The latter project will include a study of form letters and suggested methods for making periodic analyses of correspondence practices.

Monthly Articles

Of the five articles proposed for the A. G. A. MONTHLY, the first will discuss relative costs of mechanical and wooden pencils, the second will discuss problems arising in standardizing forms and stationery for several related operating companies, the third will discuss the value of social activities among office employees, the fourth will suggest ideas for effecting better cooperation between employees inside and outside the office, and the fifth will discuss the practical application of a method for measuring meter readers' production.

Various approaches to the problem of "Credit Rating of Customers" are proposed to be discussed at the Luncheon Conference next Fall.

The organization of the various subcommittees of the Office Management Committee is proceeding, and a number of them have already begun work.

General Accounting Committee

Three subjects for presentation at the 1935 convention were decided upon at the organization meeting of the committee at Cleveland on January 28. In addition to Messrs. Corson and Hartman, ten members of the committee were present.

The subjects to be presented are:

1. Gas Production Expenses (Comparative Practices in Accounting)

The practices followed by several representative companies will be presented in a manner similar to that followed at the 1934 convention in discussing gas transmission and distribution accounting.

2. Budgetary Control through Work Orders

This paper will cover work order systems and their relation to budgetary control of departmental and other expenses as well as construction. Practically all gas utility companies have in effect a work order procedure which covers construction and extraordinary maintenance expenditures, but it is not a general practice to follow this procedure with other classes of expenditures.

3. Machine Posting Procedure

The procedure which was recently installed by the Philadelphia Electric Company for the purpose of accumulating charges and credits and posting these items to the various ledgers is to be covered in this paper.

Customers' Accounting Committee

The organization meeting, on January 30, 1935, at A. G. A. Headquarters, was attended by A. S. Corson, L. A. Mayo, chairman of the committee, ten members of the Customers' Accounting Committee and three representatives of other committees. It was decided to undertake three assignments, to be carried out in cooperation with the Accounting Machines Committee, the Chairman of which, T. S. Lever, promised cooperation.

The assignments include:

"Comparison of Developments and Trends in Customer Billing System," a study of procedures in billing, and an analysis of reasons for using a particular system.

"Control of Customers' Accounting Procedure," which will propose typical forms to be used, and outline a general procedure for using them as well as a method of control in their use.

"Customers' Credit History Records," a report on various procedures in compiling these records, and methods used in classifying customers for credit purposes.

Articles on the following subjects will be prepared and submitted for publication in the A. G. A. MONTHLY:

1. "Combined Bill Delivery and Collecting."
2. "Standard Practices for Office Manuals."
3. "Meter Record Clerks."

Five subjects were suggested for discussion at the Luncheon Conferences, and will be forwarded to the Luncheon Conference Committee.

The committee proposes to complete its work schedule by June 1.

Mr. Mayo urged the subcommittee chairmen and members to avail themselves of the services of the Affiliated Representatives Committee, F. L. Griffith, chairman, The Peoples Gas Light and Coke Company, 122 South Michigan Avenue, Chicago. This committee is organized to contact various state associations for opinion in connection with the development of committee reports.

Customer Relations Committee

The Customer Relations Committee held its organization meeting at the William Penn Hotel in Pittsburgh on Saturday, February 9. The fact that 18 of the 20 members attended evidences great interest in customer relations activities. Chairman H. T. East stated that the two absentees had at the last minute found it impossible to attend because important business matters demanded their attention, but that their absence was offset by the presence of Section Chairman A. S. Corson and his predecessor E. B. Nutt. H. W. Hartman of Headquarters staff served as secretary of the meeting.

The committee personnel included representation from various sections of the country, the total travel mileage of those in attendance approximating 22,000 miles. Several faces new to this section of the Association were seen about the committee table, and the meeting proved to be such an enthusiastic one that the committee's success for the year is practically assured.

In order to complete the large volume of work before it in one day's session, committee members were furnished agenda of the meeting well in advance and came prepared to take active part in the deliberations. A number of subjects were discussed in detail and the exchange of views which followed the introduction of each subject proved to be both interesting and educational. The committee finally agreed

to prepare, for presentation at the annual convention, material along two lines, namely:

1. A company's relations with and obligations to its employees; developing in employees a sense of personal responsibility toward customers; keeping employees informed concerning the company and its policies and other employee relations matters.

2. Methods of obtaining, from customers, information as to their attitude toward the company; opinions of the service rendered and suggestions for customer relations improvement.

Strong subcommittees were selected to develop papers on each subject. William C. Terry of Nashville, Tennessee, will head the subcommittee which studies employee relations and R. T. Dudrear of Philadelphia the committee on customer relations.

In closing the meeting, Section Chairman Corson complimented the committee upon its attendance and progress and stated that the spirit which had prevailed was proof that the gas industry was awake to the importance of improving customer relations. He expressed the belief that results of the committee's work were bound to react to the general benefit of the industry.

Gas Ranges More Efficient

By R. M. CONNER

Director, A. G. A. Testing Laboratory

NOTABLE improvements have been made during the past three years in the thermal efficiency of gas ranges. While the greatest advancements have been confined to top burners, at the same time other features of performance have been materially improved in this respect. As a result of these developments the gas range can now definitely take its place among the most efficient cooking devices employed today. Taking into consideration such factors as convenience, speed, carrying charges, quality of cooked products, gas ranges have for many years been regarded as the most economical cooking appliances employed in the modern home. New developments which have recently been made further enhance such advantages.

Various ways and means have been employed to bring about this increase in efficiency. The American Gas Association's appliance testing and approval program carried out by its Testing Laboratory, has not only assisted in bringing this improvement about but has guided all such changes along proper lines. Approximately 90 per cent of the gas appliances offered for sale to the gas consuming public today have been approved by this institution and are identified by its Seal of Approval. No other large industry affording service of a similar nature has initiated such a widespread testing program in the public's behalf. More than 24,000 approved gas appliances are now available for selection.

A study of new style gas ranges now on the market will reveal round burners, star burners, and various modifications of these two important and conventional types. Some heating units are located rather close to the cooking top while others are placed somewhat farther away, although all manufacturers have, by the various means at their disposal, produced a more efficient cooking appliance. Such new features as the employment of burner bowls, new designs of grates and many other devices have been utilized for improvement purposes. All of these new developments have contributed to make the modern gas range not only a thing of beauty and an ornament to any household but a cooking device that is second to none from the standpoint of economy in performance.

New Requirements for Automatic Main-Gas Control Valves

AFTER several years of research in collaboration with its requirements committees the American Gas Association Testing Laboratory is introducing a new service to the industry made possible by the recent approval of Listing Requirements for Automatic Main-Gas Control Valves. These new standards which cover both electric gas control and diaphragm valves are a valuable supplement to the other requirements published by the Laboratory and permit the testing and certification of these devices under a systematic and comprehensive program.

Both the constructional features and performance characteristics of automatic main-gas control valves are examined in accordance with these standards. Accessories tested and found to comply in detail with all of the prescribed requirements are entitled to bear the Laboratory Listing Symbol. This symbol is a guarantee that when the control valve has been correctly installed it will satisfactorily meet the demands placed on it in service.

The listing requirements for these devices overlap to a certain extent the accessory clauses in approval requirements for central heating equipment. The general trend toward a complete correlation of the two types of standards will undoubtedly result eventually in the approval of central heating gas appliances being contingent, among other things, upon compliance of accessories with the listing standards.

Tests for construction under these requirements include an examination of such features as electrical connections, transformers, adjustment means, strength and durability of assembly, valve construction, and finish. Performance must be in accordance with the prescribed limits of operation and the device is subjected to such tests as leakage, capacity, life or continued operation tests, and checked for operation under variable voltage conditions. Like all other requirements of the A. G. A. Laboratory, a definite test schedule is followed and all accessories must meet all the different tests applying to its class.

W. A. Doering Dies

W. A. Doering

W. A. DOERING, auditor of the Boston Consolidated Gas Company, died February 20. He was forty-seven years of age. Mr. Doering joined the Boston company as office boy when he was fifteen and rose by successive stages to assistant auditor in 1920 and auditor in 1921.

An active participant in American Gas Association activities, Mr. Doering served as chairman of the Association's Accounting Section, the Customer Accounting Committee, and for years was a member of the Accounting Section. Following his chairmanship of the Section he became a member of the Association's Advisory Council.

Mr. Doering was active in New England Gas Association circles, serving that organization as assistant treasurer for several years. He was widely known throughout the gas industry for his interest in accounting developments.

Recent Visitors to A. G. A. Headquarters

A. C. Klein, Stone & Webster Engineering Corp., Boston, Mass.
S. Jenks, Bastian-Morley, LaPorte, Ind.
B. T. Franck, American Light & Traction Co., Chicago, Ill.
L. B. Crossman, Boston Consolidated Gas Co., Boston, Mass.
Lucien Kahn, Hamilton, Ohio.
H. M. Brundage, Jr., Washington Gas Light Co., Washington, D. C.
T. E. Bullion, Detroit-Michigan Stove Co., Detroit, Mich.
H. E. Bates, The Peoples Gas Light & Coke Co., Chicago, Ill.
A. C. Grant, Minneapolis-Honeywell Regulator Co., Minneapolis, Minn.
E. J. Boothby, Washington Gas Light Co., Washington, D. C.
Carol Upham, Bridgeport Gas Light Co., Bridgeport, Conn.
R. A. Maloney, Bridgeport Gas Light Co., Bridgeport, Conn.
Fenton Kelsey, Fenton Kelsey Co., Chicago, Ill.
R. B. Harper, The Peoples Gas Light & Coke Co., Chicago, Ill.

COMMERCIAL SECTION

F. M. ROSENKRANS, Chairman J. W. WEST, Jr., Secretary C. E. BENNETT, Vice-Chairman

Mid-West Sales Conference Attracts Large Gathering

By WINFIELD FOSTER

The Peoples Gas Light and Coke Co., Chicago, Ill.

WITH an attendance in excess of 350, and with a three-day program packed with interesting and informative talks and demonstrations, the 1935 Mid-West Regional Gas Sales Conference, held in Chicago on February 14-16, was voted by every one present as one of the most successful ever conducted.

From the opening remarks by the chairman, W. L. Jones, of the St. Louis County Gas Company, until the last speaker of the meeting on home service Saturday morning, the sessions were unusually well attended. In addition to an interesting program, those attending the convention were much interested in looking at the exhibits of gas flood lighting, refrigeration, water heating, and cooking equipment.

The keynote address of the convention, "1935 Sales Ideas and Suggestions for Applying Them," made by Arthur H. Brayton of Marshall Field and Company of Chicago, was most enthusiastically received.

"Our merchandising activities, as well as those of other retail and wholesale establishments, have shown that the public is in a receptive mood to buy quality goods," Mr. Brayton said. "But the public requires a lot of convincing. People are smarter buyers than they used to be. You have to give them reasons why your product is a quality product. This means that your sales people must be trained constantly, that they must know the good points of your product, as well as you yourself know them, and that they must be filled with enthusiasm for getting the story over."

Rules for Successful Selling

Mr. Brayton laid down three rules for successful merchandising: First, tell your sales story as dramatically as possible, second, tell it from the customer's viewpoint, and third, keep telling it in a new way, so that the customer's interest may be held. In other words make a "serial story" out of your sales story.

Bringing the convention news about the 1935 National Gas Range Sales Contest, H. M. Brundage, Jr., chairman of the American Gas Association's Domestic Range Committee, stated that the committee expected a registration of over a thousand participants for this contest. "The participation of thirteen range manufacturers, who have underwritten one-third of the cost of the contest, plus the added contributions of five accessory manufacturers, has been of great help in assuring a successful contest," Mr. Brundage said.

Registration fees for utilities entering the contest range from $10 to a maximum of $75, and from present indications, these fees will be ample to cover the utilities' share of the cost of the contest.

Companies are divided into six groups, on the basis of number of meters.

"If we would all promise ourselves that we will never again use the words 'gas range' without saying 'modern gas range' whether among ourselves, to our sales people, or in our advertising," Mr. Brundage said, "we would go a long way toward counteracting the propaganda developed by our competitors. As long as we utility men continue to call our product a 'gas range' it will be largely thought of in terms of the gas range our public has known for so many years."

The final feature of the opening session, was the presentation of a sound motion picture, "The Heart of the Home" by C. A. Luther, of The Peoples Gas Light and Coke Company of Chicago. Mr. Luther explained the way in which the motion picture had been used, not only for public showing, but for training salesmen of dealers affiliated with the company in the Gas Appliance Society campaign.

Motion Picture Experience

"When we began the activity of the Gas Appliance Society in March, 1934," Mr. Luther said, "there were 231 dealers selling gas ranges in Chicago. The first thing we did was to make an intensive survey of their selling methods, and we determined that the most vital need was some means of properly training sales people to get the story of the modern gas range across to the public."

Mr. Luther asserted that experience in showing the film to the public convinced him that very few people know there is such a thing as a modern gas range.

The film itself, which was then shown, might be more properly entitled "The Glorification of the Modern Gas Range" because it tells the story of how a cus-

Retiring Chairman W. L. Jones of the St. Louis County Gas Company offers his best wishes to A. E. Schwarz, incoming chairman, at the 1935 Midwest Regional Gas Sales Conference. J. W. West, Jr., of the American Gas Association, superintends the ceremony

Arthur H. Brayton, of Marshall Field and Company, keynote speaker, told delegates to the conference that the public is ready to buy quality merchandise. Seated, W. R. Evans of The Peoples Gas Light and Coke Company of Chicago

tomer was convinced that a modern gas range is really one of the most important features of equipment in the home.

The Thursday afternoon session presented two speakers on gas refrigeration, C. A. Miller and C. A. Spiegel, who stressed the advantage to gas companies in pushing gas refrigerator sales.

"It is well known to every gas man who is concerned about building up the sales of his organization," Mr. Miller said "that a load almost equal to the average annual cooking load can be added to your line every time a gas refrigerator is sold. About 25% of your customers now have electric refrigerators, and every one of those is going to have to be replaced within the next few years. There is your market."

A further advantage to the gas company in having gas refrigerators on its line, Mr. Miller pointed out, is that people generally think that refrigeration is worth several times its cost to them, since the cost is small and the service is great, and, therefore, gas refrigeration is a good will builder.

Refrigeration Contest

C. A. Spiegel outlined in very enthusiastic terms, which brought forth repeated applause from the convention, the 1935 Electrolux Sales Campaign, and gave the details of the American Gas Association's Prosperity Cup Contest.

"It is well to let us get back to the old principles of selling," Mr. Spiegel urged. "First, let's know our product; second, let's know our prospect; third, let's put in some real selling effort."

A greatly augmented and advertised sales campaign, via Electrolux, was outlined for 1935 by Mr. Miller. A substantial part of the selling campaign is directed toward the encouragement and training of retail salesmen.

"What the Better Housing Program Means to the Gas Company" was told to the convention by Joseph Stewart, campaign director for the Chicago Better Housing Committee. Mr. Stewart pointed out that all gas equipment permanently attached to gas piping is eligible to be financed under Federal Housing Administration terms, and as further advantages to gas utility companies, Mr. Stewart pointed out: First, that any improvement in general business conditions (one man out of four at present unemployed is usually employed in building trades) would of course help in any sales campaign, and, Second, that the entire underlying idea of the Federal Housing Administration Program is to encourage a revival of interest in the home, which is where the product of the utility company is sold.

The final address on the afternoon's program, "Cooking for Profit" by L. A. Dubberke, of the Milwaukee Gas Light Company, dealt with the hotel and restaurant market. Mr. Dubberke analyzed competitive fuels, showing their disadvantages, in particular, exploding the "less shrinkage" claim of the electric range manufacturers.

The most formidable competition at present encountered by gas for large volume cooking, Mr. Dubberke said, is the large number of obsolete appliances now in use. "The way to meet competition is by replacing obsolete equipment with modern thermostatically controlled equipment," he continued.

Discussing Mr. Dubberke's paper, T. J. Gallagher, of The Peoples Gas Light and Coke Company, chairman of the Hotel and Restaurant Committee of the American Gas Association, said, "Seventy-five per cent of the gas equipment now in use in hotel and restaurants is old and should be replaced. We must cooperate more closely with dealers. We must step aside, if necessary, and give them every advantage and inducement."

The Friday morning session was devoted entirely to water heating sales methods.

The first speaker, C. E. Bartlett, of Bartlett & Co., Inc., of Philadelphia, reviewed the history of automatic water heaters since 1920, when the American Gas Association urged their active promotion as a good load builder.

High points of Mr. Bartlett's paper were:

1. Automatic gas water heaters must be sold, installed, and serviced in a manner that will bring the customer absolute satisfaction.

2. The customer's needs must be studied carefully, and exactly the right water heater must be sold to him.

3. An open market must be preserved for quality water heaters, made by manufacturers who will promote the sale of them. Intensive sales drives employing easy terms on a "trick" water heater and excluding quality water heaters are suicidal in the long run.

Water Heater Rental Plans

The second speaker, M. H. Feldman, of the John Wood Manufacturing Company, of Conshohocken, Pa., told the story of sales of automatic water heaters on liberal rental plans. Mr. Feldman pointed out that the rental plan is not new by any means and has been used in England for the past fifty years, and for a similar period in continental Europe. It offers the public the chance to "try before they buy." "Generally speaking," Mr. Feldman said, "rental plans, particularly with a low monthly rental charge, have resulted in some cases from five to ten times as many installations as have been achieved by installment purchase plans under comparable sales efforts, and there have been fewer removals from these installations than from those made under installment plans.

The third speaker, J. H. Fagan, of the Fagan Andrews Company, of Milwaukee, Wisconsin, had for his subject "The Market for Upstairs Controls."

Pointing to an average increase in gas consumption of 1200 cubic feet per month after the installation of remote control on side-arm water heaters, Mr. Fagan pointed to installation of these controls as a logical step between the non-automatic water heater and the pulley automatic water heater.

Mr. Fagan urged that gas companies install a few real working displays of water heaters with remote controls. "In the old days," Mr. Fagan said, "some gas companies did the almost unheard of thing today of having an actual work-

ing model of a water heater on the sales floor, instead of an inanimate dummy. It might be a good thing to go back to that form of demonstration, since the customer who understands the workings of his water heater, whether automatic or manual, is much less likely to make any complaints or inquiries about it."

Gas Flood Lighting

The first speaker at the Friday afternoon session, which was presided over by W. R. Evans, of The Peoples Gas Light and Coke Company of Chicago, was J. Frank Jones, of the Battle Creek Gas Company, of Battle Creek, Michigan, who spoke on "What about Flood Lighting?" Mr. Jones recounted the experience of his company with twenty-five flood lights which they have installed. These lights are installed on filling stations and garages, and other places of business and are considered largely effective as an advertising medium because of the brilliant widely diffused type of light which they give.

"The modern gas flood light" Mr. Jones said "gives from three to ten times as much light as electricity at a comparable cost. Of course, since there is no glare, a gas flood light gives a much more effective bath of light to the entire building property where it is installed."

At the close of Mr. Jones' talk, a gas flood light of the type mentioned, which had been set up in the convention hall, was turned on and drew a round of protracted applause from those present. The quality of the light made it possible for two photographs to be taken without any other illumination being used.

The Friday afternoon session closed with two skits much enjoyed by those present—the first being "Planning a House Heating Program" presented by E. J. Boyer and associates, and dealing with the factors to be considered in planning for volume sales of house heating equipment, and the second being "House Heating Via the Telephone," showing the experience of the St. Louis County Gas Company in soliciting prospects via telephone, asking them for permission to call and present estimates as to the cost of heating their homes with gas.

Home Service Session

The conference concluded with a well attended home service session, Saturday morning, at which Isabel C. Fallon, of the Western United Gas and Electric Company, Aurora, Illinois, presided. This session opened with a talk on "Home Service and Sales" by Margaret Nevins, chairman of the A. G. A. Home Service Committee and closed with an explanation of home service activities throughout the gas industry by Jessie McQueen, home service counsellor of the Association.

A feature of the meeting was a symposium on home service at which 3-minute talks were given by the following speakers: Mary Dillon, Central Illinois Light Co., Springfield, Ill.; Allene J. Burns, Southern Indiana Gas and Electric Co., Evansville, Ind.; Claribel Adams, Washtenaw Gas Co., Ann Arbor, Mich.; Ella Lambert, Milwaukee Gas Light Co., Milwaukee, Wis.; Irene Hickey, Detroit City Gas Co., Detroit, Mich.; Isabel C. Fallon, Western United Gas & Electric Co., Aurora, Ill.; and Mabel Claire Atwood, Grand Rapids Gas Light Co., Mich.

Other speakers were B. T. Franck, chairman of the A. G. A. Home Modernization Committee, who spoke on "Home Service and Home Modernization," and H. H. Koelbel, of the Consumers Power Co., Jackson, Mich., whose subject was "Home Service in Trade-Dealer Contacts." The meeting concluded with a home service luncheon at which Mrs. Anna J. Peterson of The Peoples Gas Light & Coke Company presided.

Meter Reading Accuracy

TWELVE meter readers for The Peoples Gas Light and Coke Company, Chicago, who read 678,000 meters in 1934 without making an error, recently were presented with bonus checks by Bernard J. Mullaney, vice-president of the company.

Five of the twelve also had perfect records in 1933 and two, Herold Gustafson and Frank Strumski, had perfect records in 1932, three consecutive years.

"I hope you '100 per centers' won't rest on your laurels," said Vice-President Mullaney in presenting the checks. "Keep it up—keep on setting a good example for your fellow workers."

The average accuracy of the 172 meter readers employed by the company was 99.96 per cent for the 9,925,808 readings made during 1934, the figures show. In other words, a customer could use gas service for 208 years without the liability of having an error made.

Sulphur Recovery in Melbourne

During the past six months, sulphur recovery from spent oxide has been practiced at the West Melbourne works of the Metropolitan Gas Company, Melbourne, Australia. The sulphur has been recovered in the form of ammonium polysulphide and, by cooperation with the Victorian Department of Agriculture, has been issued to fruit growers for experiments in its use as a spray against red spot and other pests. Reports from orchardists have been enthusiastic and it is probable that the company will in future market this by-product, the disposal of which will have a beneficial effect in reducing purification costs.

In the distant future gas will be the universal domestic fuel and the gas will, of necessity, be made from coal, according to Thomas G. Estep, professor of mechanical engineering, Carnegie Institute of Technology.

Hotel and Restaurant Sales Symposium

Under the auspices of the
Hotel and Restaurant Committee, Industrial Gas Section
American Gas Association

Palmer House, Chicago, Illinois
FRIDAY, MARCH 22, 1935, AT 9:30 A.M.

Chairman, T. J. GALLAGHER
The Peoples Gas Light and Coke Company

No formal presentation of papers will be made at this meeting. Delegates are invited and urged to fully participate in the discussions of the following subjects:

Dealer Cooperation
I. S. ANOFF, president
Albert Pick Company

Customer Relations
RALPH L. MANIER
The Syracuse Lighting Company, Inc.

Hotel and Restaurant Sales Promotion from the Manufacturer's Viewpoint
C. H. FRENCH
Standard Gas Equipment Corp.
W. J. HILL
Detroit-Michigan Stove Company

Advertising in the Hotel and Restaurant Field
FENTON KELSEY, president
Fenton Kelsey Company

Modern Gas Appliances for Volume Baking and Cooking
ROBERT H. STANIFORD
The Brooklyn Union Gas Company

Competitive Fuels
C. G. SEGELER
American Gas Association

Servicing Hotel and Restaurant Equipment
ROY E. WRIGHT
Cambridge Gas Light Company

MANUFACTURERS' SECTION

JOHN A. FRY, Chairman J. SCOTT FOWLER, Vice-Chairman C. W. BERGHORN, Secretary MERRILL N. DAVIS, Vice-Chairman

The Manufacturer, the Utility and Dealer Relations

G. E. Frazer

By GEORGE E. FRAZER

Counsel, Gas Appliances Institute, Chicago, Ill.

AS Counsel for a Code Authority Committee, I am not unmindful of the courageous individualism which has always been best exemplified in New England. It is not likely that I shall find you very enthusiastic as to Governmental ness. On the other hand, our experiences as consultants for the Code Authority in the Gas Appliances Industry have been particularly fortunate as to the New England manufacturers of gas appliances. Your manufacturers have not particularly needed to be told what minimum wages should be paid, as your wage scales have long been satisfactory and well maintained. Nor have we had frequency of occasion to admonish New England manufacturers as to fair trade practice, as the New England manufacturers have a long tradition of fair trade practice and, indeed, in that respect we have had very happy experiences quite generally with gas appliance manufacturers all over the United States.

Code Organization

The Gas Appliances and Apparatus Industry has long had a successful organization in the Manufacturers' Section of the American Gas Association. With the advent of the National Recovery Administration and the Blue Eagle Campaign, it became apparent to us that the manufacturers had problems relative to labor and to trade practices which could not be considered by a division of the American Gas Association without the probability of involving the utilities in labor problems and other problems peculiar to the manufacturer. Gas Appliances Institute was organized, therefore, as a trade association for the express purpose of preparing and presenting a Code of Fair Competition for the approval of the President.

Our Code was approved on November 27, 1933, and has been in operation now for a period of 14 months. Looking through the legal form of the language, the Code is a relatively simple document, providing for three sets of conditions:

First, there are provisions as to minimum hours and minimum wage rates.

Second, there are provisions for the open filing of prices.

In the third place, there are provisions that prices must be equal to costs to the seller.

A committee elected by representatives of the various product groups is set up as the Code Authority. The acts of the Gas Appliances Committee are subject to approval or disapproval by the National Recovery Administration at Washington.

Administration

The committee has established its principal office at 3900 Board of Trade Building, Chicago, and has branch offices in New York City at 230 Park Avenue; in Los Angeles at 810 South Flower Street; and in Washington at the Albee Building. Prices have been filed by 345 separate companies and the prices cover 42 principal groups of gas appliances and apparatus. The work is supported by contributions from the 209 principal manufacturers. The budget collected for the year 1934 was $82,839.00, representing 2/10 of 1% of 1933 sales of gas appliances. We know that the assessments are reasonable compared to the larger assessments collected for code administration of similar industries and we know that the work has been economically and efficiently administered.

There have been remarkably few complaints as to labor conditions, and, on the whole, the industry has enjoyed cordial relations with its employees. The wage conditions of the Code have been thoroughly met by the overwhelming majority of the manufacturers. The minimum rate in the Northern states is 40¢ for male employees and the maximum number of hours is 40 hours per week. It must be understood, of course, that this $16.00 per week is the minimum for common labor and that the average wage rates are substantially higher than the minimum.

The 40-hour limitation has proven disadvantageous to us because of the seasonal character of our work. The maintenance of the 40-hour limit per week has been a patriotic duty cheerfully performed by the manufacturers, even to their financial loss and frequently to the disruption of their production schedules. Parenthetically, we think our employees would feel rather badly if there were any reduction of working hours below 40 hours and we know the industry would have difficulty in sustaining their financial losses by such further reduction of working hours.

The open-price filing has been a success. Open-price filing as we conduct it is directly opposed to monopolistic tendencies and is quite the opposite of price-fixing. Each manufacturer is entirely at liberty to set his own prices as long as he files them for comparison with the prices of other manufacturers making similar products in similar classifications. We do not believe in price-fixing and we have not engaged in price-fixing. We do believe that open-price filing is a real economy to the manufacturers, as it makes unnecessary the expense of shopping around for knowledge of competitors' prices. Open-price filing is of great advantage to the small manufacturer. The larger manufacturers, of course, always have had information about competitive prices, but in the case of the larger manufacturers there is real economy in the present open-price filing system and we hope that this will be permanently continued. The alternative of the open-price filing system is, of course, secret prices, secret rebates and secret concessions. Such secret advantages may look good to the buyer on occasion, but they are monopolistic in character and result in destructive price competition injurious to all, or they result in the establishment of monopolistic conditions not favorable to the buyer or to the consumer. Open-price filing is a real protection to the small manufacturer and should be insisted upon by the buyers and the consumers.

Price Filing

Nor do I think there are any real grounds for debate as to our Code requirement that prices must be above costs to the seller. Certainly this is the very basis for honorable dealing. It is specious to argue as some do that costs cannot be ascertained. Every manufacturer each year for the last 20 years has had to swear to a tax return containing the positive statement that the inventory reflected in the balance sheet

Address before the New England Gas Association, February 15, 1935.

was at cost or at the lower of cost or market. Similarly, in our Code work we require manufacturers to furnish us certificates that their selling prices are equal to, or above, their costs. As is the case with Federal tax returns, so is the case with our costs certificates. We can safely say that all but a small minority are honest both in their tax returns and in their certificates as to costs under our Code. As to the outside fringe element, we have a budget adequate to enable us to make full investigations and we can, and do, employ certified public accountants competent to ascertain all details of costs whenever any such requirement becomes imperative.

The above brief outline is given to you about our Code organization because we know you are interested in what we are doing and in the success we are having. Frankly, we did not invent the NRA and many of us would prefer trade association work done with the permission of law, but done without the compulsory features of the present NRA legislation. We have been very careful not to invoke the compulsory features and not to seek Governmental interference in our business. We have been equally careful to properly organize our Code Authority so as to protect both our industry and our consumers.

Cheap Labor Problem

This aspect of our Code should not be dismissed without further reference to that small fringe of manufacturers found in our industry and in every industry whose only idea seems to be to employ cheap labor for the manufacture of cheap goods to be sold at cheap prices, irrespective of labor conditions, and irrespective of the rights of investors in factories, and irrespective of the safety and quality factors needed and demanded by the consumers. Happily, we have very few such manufacturers in the gas appliances industry. It is certain that such manufacturers do not love our Code Authority Committee and they do not support its work. Our Code Authority Committee has published a Manual and Directory containing our Code and our rules and containing the names and addresses of the regular manufacturers whom you can safely depend upon for proper labor conditions, for honest, open prices, and for a fair deal as to safety and quality of products. We suggest that utilities will serve themselves well if they consult this Manual and Directory. For if you do not support the regular manufacturers who are seeking to conduct their business free from Governmental interference, or if you do support the fringe element, the result may well be that Governmental interference in business becomes a necessity and a permanent, continuing feature. We know of no way more certain to fasten bureaucracy upon our Industry than for the utilities to purchase appliances from the manufacturers who do not maintain proper labor conditions or who will not abide by open prices or who do not seek to sell their goods at a satisfactory profit to themselves.

At that great convention in Atlantic City last November the figures were presented as to the present investment in the gas appliances industry. Those figures will bear repetition here:

"In 1929 the investment in the gas appliances industry was $130,000,000. In February, 1934 the investment in the manufacture of gas appliances was $87,000,000—a loss of $43,000,000. A loss of $43,000,000 out of an investment of $130,000,000 is a loss of 33 per cent. It is simple arithmetic to say that a loss of $43,000,000 out of an investment of $130,000,000 is a loss of one-third. But the loss is more significant to you than that.

"Of this loss, this one-third loss of the entire industry, the loss in the fixed investment in land, buildings and machinery was only $6,000,000. That is to say there were land, buildings and machinery, less depreciation, of $51,000,000 in 1929, and there are land, buildings and machinery in 1934 of $45,000,000, so we had a loss of $6,000,000 in land, buildings and machinery. Here is where you come in.

"The current assets—cash, accounts receivable and inventories, out of which your customers are served, shrank from $82,000,000 in 1929 to $47,000,000 in February of 1934—a loss of $35,000,000. In other words, we had $82,000,000 of cash, accounts receivable and inventories out of which we could serve your customers in 1929 and we now have $47,000,000. That is of real importance to you because your consumers, your gas load rests upon this $47,000,000, which is at least $40,000,000 inadequate for any normal growth of your business load.

"The problem then is how to get the $40,000,000 back into the gas appliance business. The men in the gas appliance business want to get it back. They are in that industry; they believe in it and they like it."

Utility Leadership

The manufacturers rely upon the utilities for leadership. This is a perfectly natural and right thing. The utilities have the duty of supplying gas as a fuel for the convenience and comfort of the public. The utilities have enormous investments. The utilities are efficiently managed and have won public confidence in their operations by economies in operation and superior quality of product. The utilities have made these great accomplishments as the result of their own fine leadership. This leadership is known to the manufacturers of gas appliances and we rely upon the leadership of the utilities. There are specific problems where we need this leadership.

The first problem is that of cheap merchandise. Approximately half of the gas appliances are sold by the utilities. These are the quality products. These are the products which set the standards for the use of gas. It is natural and right for the utilities to sell good appliances. The mail order houses and the department stores may or may not be equally interested in the factors of safety and quality of appliances. For their own protection and for their own development the utilities must be interested in the quality of appliances. We beg you to maintain that leadership. Once the utilities engage in cheapening the quality of appliances or lowering the safety factor, there is literally nowhere else for the manufacturer to go. Now we know you need and must have increased load. We know the alluring but specious argument that you can get this load by cheapening the price of appliances. The manufacturers have gone along with many of you down that road partly because they value your leadership and partly because of excessive production facilities. Nevertheless, you need to think correctly about this and we look to you for leadership on this vital point. No law and no code can restore the proper investment in gas appliance manufacturing, if the leading utilities insist upon selling cheap appliances without the hope of profit to the manufacturers.

Long-Term Financing

In the second place, we need your leadership in the matter of long-term financing. The electric appliances industry may have larger manufacturers with sufficient financial resources to engage in long-term financing of the sale of electric appliances. The gas appliances manufacturers do not have such financial resources. If there must be long-term selling of gas appliances, then the utilities must take the leadership in that problem and show us how to organize the necessary financing. We certainly are not against you on this point, but it is equally certain that literally and exactly we can do relatively little about long-term financing unless we have the active support and leadership of the gas utilities.

In the third place, we need your leadership in the matter of cost to the consumer. We can, and we do, make gas appliances of real quality and at lower prices than equivalent appliances manufactured for the consumption of other fuels. We stop, however, when we make and sell the appliance. The utilities make and sell the fuel and the cost of that fuel is the determining factor in the growth and well-being of the gas appliance business. In New England, for example, there are plans in the making for the erection of homes and of flats to be served by coal as the fuel not only in room heating but in cooking and in water heating. These building plans are not based upon the superiority of coal appliances, nor are they based upon the lower price of coal appliances. These building plans rest directly upon the cost of gas for domestic cooking as compared with the cost of coal. We earnestly invite you to survey your own field and your own costs relative to this vital problem, because as to this problem, again we are dependent upon your leadership.

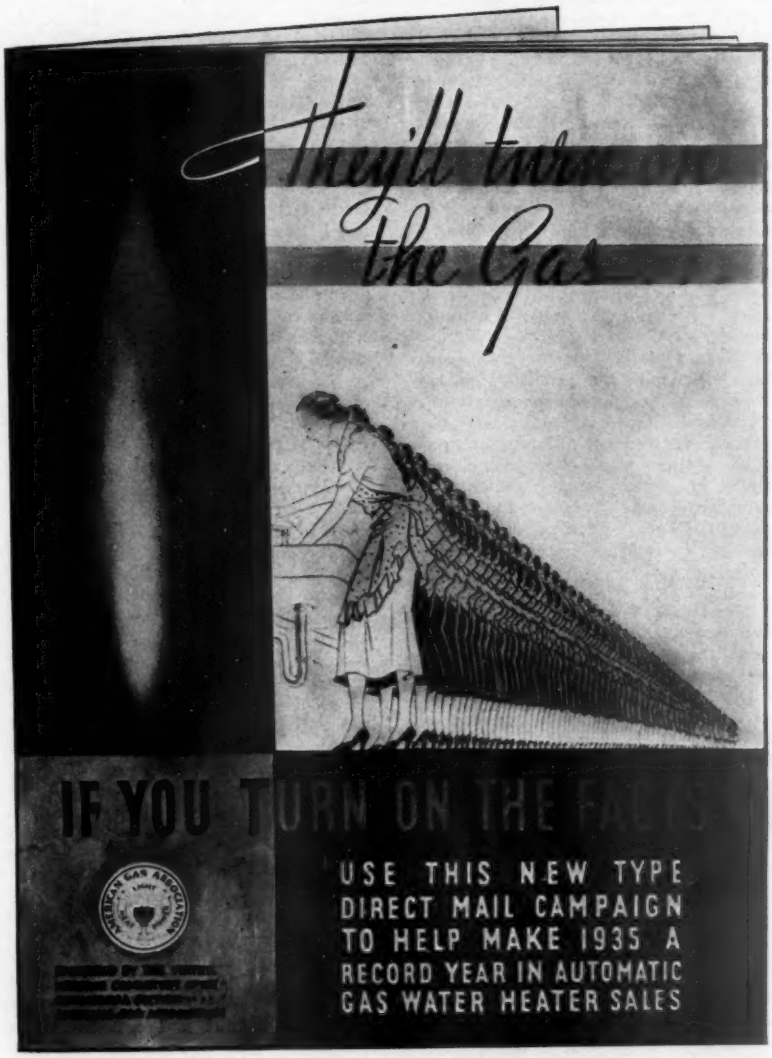
In the fourth place, we look to the utilities for leadership in research. Our manufacturers are ready and willing to

meet your every requirement. We believe that it is for you to organize research in the use of gas as a fuel in strict competition with the use of oil as a fuel and in strict competition with the use of coal as a fuel and in strict competition with the use of electricity as a fuel. We pledge every dollar of our investment behind such a program of leadership in research.

In conclusion, please let me say that these four problems are problems for all gas utilities and all gas appliances manufacturers in every part of the United States. Effective leadership, however, must be sufficiently local so that responsibility may be felt. You have this opportunity right here. And we ask you for permission to share with you in the study and in the solution of these four major problems. Whether our Code organization continues or not is a matter for the Congress to decide. Doubtless the leadership of our great President will prevail. But whatever happens in legislation, these four problems are industry problems which can be solved by the utilities and by the manufacturers in spite of any Code or legislation. Working together, we do not need to fear legislation, since such legislation will probably affect our competition quite as much as it does us. Nor do I say that these are new problems or recently discovered problems. What is necessary is the effective use of the organization of 209 manufacturers who have proven themselves willing to underwrite a substantial budget and able to carry on successfully a constructive program. What we have done as to labor conditions and as to open-price filing and as to selling above costs gives me the assurance to promise you effective cooperation in respect to the problems I have named. The depression has resulted in a lot of statistics which look none too bright. The manufacturers have lost half of their current assets and we hear that the utilities have had diminished revenues. Much is gained by carefully reviewing these pessimistic figures. More is gained when we point out these four problems and show you an organization of manufacturers able and willing to follow your leadership.

Our manufacturers like the gas industry. We are not going to leave it. More than our money is in it. We have put our lives into it. We are going to stay with it. We believe in gas as the best of all fuels for home comfort and for industry. We believe in you and in your leadership. You represent half of our customers. There are very few industries, indeed, where such cordial relations exist between manufacturers and their customers as exist between the gas appliances manufacturers and the gas utilities. We thank you for that relationship, in which we take great pride. Code or no code, we look forward with keen pleasure to greater cooperation with you.

A. G. A. Water Heater Direct Mail Campaign


They'll turn on the Gas
IF YOU TURN ON THE
USE THIS NEW TYPE
DIRECT MAIL CAMPAIGN
TO HELP MAKE 1935 A
RECORD YEAR IN AUTOMATIC
GAS WATER HEATER SALES

WITH the objective of greatly increasing the sale of gas for water heating in 1935, the Water Heating Committee of the Commercial Section, with the help of a competent advertising organization, has prepared a National Direct Mail Campaign designed to assist every gas company member of the American Gas Association. The exhibit portfolio shown here is being prepared by the committee and will be mailed on or about March 15 to every gas company and automatic gas water heater manufacturer who is a member of the Association.

The campaign has been built on overcoming:

1. The public misconception of cost of operation as compared with other methods.
2. The lack of desire, or really the inertia on the part of the prospect for all the conveniences of automatic hot water by gas.

The campaign consists of a variety of pieces designed to interest all types of prospects. The advertising message in each piece has an incentive that is particularly designed to bring action.

Besides providing for inquiry action in every piece, the last piece of the series climaxes with a special inducement that will help salesmen by starting even the lagging prospects moving toward a purchase.

INDUSTRIAL GAS SECTION

J. F. QUINN, Chairman C. W. BERGHORN, Secretary C. W. GALE, Vice-Chairman

New Industrial Gas Advertising Campaign To Be Inaugurated

BEGINNING this month, the Industrial Gas Section of the American Gas Association inaugurates a new advertising campaign which will continue through October, 1935.

Due to the limitations of the budget, advertising during this period will be limited to two fields—the Ferrous Metals and Wholesale Baking Industries.

To reach the ferrous metals industry most effectively and most economically, two publications only will be used—Iron Age and Steel. These two publications have a combined circulation of 17,306 copies, covering producers and fabricators of iron and steel and also the manufacturers of iron and steel products throughout the entire country.

There are a number of other publications reaching the ferrous metals industry which would make valuable additions to the industrial gas advertising schedule, but practical considerations have dictated the concentration of advertising in these two "horizontal" publications.

Advertising to the baking industry has also been limited to two publications—Bakers Weekly and Bakers Helper. Both of these publications are national in coverage with a combined total circulation of 20,511.

One Ad Per Month

The advertising schedule for all four publications calls for one advertisement per month in each. Advertisements will be staggered, so that in each field there will be one advertisement appearing every two weeks.

Double page advertisements will be used in both Iron Age and Steel throughout the campaign—giving a total of eight two-page advertisements in each publication from March through October. Double pages are used not only for their greater attention value, but in order to give proper emphasis to the advertising story that will be told in the individual advertisements.

This story is an important one. It has to do with the new knowledge of gas and of the application of gas in industry which has been developed as a result of research projects sponsored by the American Gas Association.

This research covers subjects that find definite and practical applications in the ferrous metals industry. The research story has news value. It suggests the alertness and progressiveness of the gas industry. And because it is so important, it was felt that the presentation of the story should in itself suggest that importance. Double page advertisements were therefore decided upon as the most forceful and most effective way of telling this research story to industrial gas prospects.

Slogan of the new campaign

By J. P. LEINROTH*
Public Service Electric & Gas Co.,
Newark, N. J.

On the following pages, is a reproduction of the first advertisement of the series for the ferrous metals industry.

There are four points in connection with this advertisement which bear specific mention because they are representative of the entire campaign.

1. The general research story carried in the main body of copy. This story, or some phase of it at least, will be told in each advertisement in the series.

2. The listing of the various applications of gas in industry—shown in the panel at the left. The purpose here is of course to suggest the wide variety of uses of gas in industry. It is planned to carry this list of processes in some form or other as a standard part of each advertisement.

3. The tie-up with the local gas company—in the last paragraph of the main copy and, also, in the panel at the right. In every advertisement the reader will be urged to consult with his local gas company and to get from the gas company industrial engineer the basic new information about gas referred to in the advertisement.

4. The chart showing the upward trend of gas as an industrial fuel. In this first advertisement, the chart is the principal illustrative feature.

It was generally agreed that some sort of slogan or key thought should be developed which could be used in all advertising. For this purpose, the following was selected—"THE TREND TODAY IS TO GAS—THE MODERN INDUSTRIAL FUEL." While this statement tells an important story, in that it suggests not only that gas is a modern fuel but that its use in industry is increasing, the effectiveness of it has been considerably enhanced through representing it pictorially in chart form. In each advertisement after the first, this slogan will be carried in the form shown in the illustration above.

In the baking publications, single page advertisements only will be used.

Gas for Baking

Here the general advertising story will be a suggestion to bakers everywhere to re-appraise their baking and heating problems in the light of the new knowledge of gas development through recent research. Photographs will be used to show recent gas installations as well as to show the many types of baking that can be and are being done with gas.

The schedule of advertising as at present agreed upon is as follows:

Two-page spreads: Iron Age and Steel.

Single pages: Bakers Helper and Bakers Weekly.

Ferrous Metals Industry		Baking Industry	
Mar. 7	Iron Age	Mar. 9	Bakers Weekly
18	Steel	23	Bakers Helper
Apr. 4	Iron Age	Apr. 6	Bakers Weekly
15	Steel	20	Bakers Helper
May 2	Iron Age	May 4	Bakers Weekly
13	Steel	18	Bakers Helper
June 6	Iron Age	June 1	Bakers Weekly
17	Steel	15	Bakers Helper
July 4	Iron Age	July 6	Bakers Weekly
15	Steel	27	Bakers Helper
Aug. 1	Iron Age	Aug. 3	Bakers Weekly
13	Steel	24	Bakers Helper
Sept. 5	Iron Age	Sept. 3	Bakers Weekly
16	Steel	21	Bakers Helper
Oct. 3	Iron Age	Oct. 5	Bakers Weekly
14	Steel	19	Bakers Helper

It is the Advertising Committee's hope that individual gas companies everywhere

* Chairman—Advertising Promotion Committee, Industrial Gas Section, A. G. A.

THE TREND TODAY IS TO GAS

GAS...
THE PREFERRED FUEL FOR

Hardening
Carburizing
Annealing
Drawing
Tempering
Normalizing
Bluing
Nitriding
Forging
Galvanizing
Core Baking
Spheroidizing
Malleablizing

And Many Other Processes

The trend to Gas for all forms of industrial heating is given new impetus today as a result of important new information recently developed through a number of original research projects sponsored by the American Gas Association.

This research has covered such important subjects as—The Scaling of Steels at High Temperatures—Combustion Space Requirements for High Temperature Furnaces—Decarburization of Steel at Heat Treating Temperatures—and The Effect of Operating Temperatures and Furnace Pressures on the Combustion of Industrial Gas.

The new knowledge of Gas and Gas Combustion acquired through this research has been paralleled by the development of new equipment designed to utilize this new knowledge most advantageously.

AMERICAN GAS
INDUSTRIAL GAS SECTION

First of a series of advertisements for the ferrous metals industry

These important developments not only make Gas available for many industrial processes on a more practical and more economical basis than ever before, but they also open up many absolutely new fields of usefulness for this modern fuel.

In this new knowledge of Gas and its application in industry, there may be important information pertinent to your own problems. So—no matter what your heating problems may be—no matter what your previous knowledge of gas may be—it will pay you to investigate these new facts about Gas.

Your local Gas Company industrial engineer will welcome an opportunity to give you details of these important developments in the field of industrial heating with Gas, and to show you how they may affect your own processing work. Get in touch with him today.

ASSOCIATION
420 LEXINGTON AVE. N. Y.

Consult Your Gas Company Engineer

About the important new research data on the use of Gas for industrial heating. It may mean a decrease in production cost—an improvement in the quality of your product —or both!

which inaugurates the new industrial gas advertising campaign

will cooperate aggressively with this industrial gas advertising in their own territories.

One suggested form of cooperation is the use of four-page letters showing a reproduction of the industrial gas advertisements to be sent to prospects regularly as an advertising mailing piece. The advertisement would be reproduced on the inside of the four-page letter. The first page would then be available for the gas company's own letter, and page four could be used for photographs of local installations or for any other purpose desired.

To gas companies who desire to use this four-page letter idea, electros of the advertisements will be available from A. G. A. headquarters at cost.

Some gas companies may desire to run these advertisements over their own signatures in local or sectional publications covering their own territories. To encourage this form of advertising, the Advertising Committee is making an analysis of sectional publications suitable for reaching industrial prospects in various territories. When completed, this analysis will be released to member gas companies together with suggestions for the most effective use of such publications.

This industrial gas advertising program, while necessarily limited in scope, is unquestionably a step in the right direction, and it is the earnest hope of the Advertising Committee that gas companies everywhere will cooperate so vigorously with this campaign that results will justify a substantial expansion of advertising activity during the next fiscal year.

The advertising of the Industrial Gas Section is being prepared and placed by Ketchum, MacLeod & Grove, Inc., of Pittsburgh.

Future Aspects of Gas Utilization in the Ceramic Industry

By H. C. WELLER

Chairman, Ceramics Committee, Industrial Gas Section

MAN'S knowledge of the many applications and uses of heat has largely been responsible for industrial achievements of the modern age. The ceramic industry is using heat for practically every phase of its diversified processes and it is the problem of this industry to comply with rigid and exact specifications where quality standards of production demand a fuel of equally high characteristics.

Of no less importance is the increasing necessity of further improving existing methods of firing with a view to off-set, in some measure, the advance in manufacturing costs attributable to various factors now influencing the operation of the highly progressive ceramic industry. Progress in this field never invites stability, but creates wants and desires, machinery, new processes and applications. Herbert Spencer said, "Progress is not an accident. It is part of nature." Theories of yesterday are being discarded but those which proved true, are experience today.

The old-fashioned, beehive type, intermittent kilns in the pottery industry of a few years ago, are being rapidly replaced by more efficient continuous tunnel car type kilns of various dimensions and capacities. For example, one continuous kiln of 300-foot length, replaces six intermittent bisque kilns or eight glost kilns, depending, of course, upon operating schedules. The present trend is towards smaller, more compact units, one example being the circular type continuous kiln. The next step will possibly be the adoption of still smaller, self-contained, continuous kilns with a probable production per unit of one-third of the present circular type kilns.

The ghost of obsolescence in this particular field will again be dispelled by continuous research developments and successful industrial adaptation of the principles involved. Many expensive attempts to fire clay ware electrically have, as yet, in this country at least, not been very successful, with the exception of firing decorated ware, enameling flat ware, glass lehrs, *i.e.* in processes where static surface heating is adaptable and no uniform body firing is necessary as in the case of clay bodies which require uniform atmosphere plus even kiln temperature for the different stages of firing: dehydration, oxidation, vitrification and annealing. It is reported that electric clay ware firing at high temperatures by means of electrically heated refractory elements with provision for activated air or gas atmospheres, has proved successful in small continuous kilns in England and Germany.

Committee's Objective

Without waiting for T.V.A. ceramic research developments, the day may not be far distant when manufacturers will attempt to introduce that type of kiln in this country. The ceramic industry is deeply interested in electric kiln firing and if we are to hold our own and increase our gas load despite supplantive competition, it is not only obvious but quite necessary that we shall have to prepare for such costly surprises and watch now for tendencies toward any new change.

The general objective in organizing the A. G. A. Ceramics Committee as part of the Industrial Gas Section, is the analytical interpretation of such supplantive trends in the ceramic industry and the methods to be used will be carefully selected with a view to ultimately benefit the utilization of gas in this particular field. The solution of the problems created by the constant procession of changes, cannot be based upon an opportunistic policy of waiting for these changes to appear, and of then determining the course to be followed, but by systematic analysis and planning, by discovering new trends before they have become too strong to resist or modify.

Formulation of the work to be undertaken by this committee is as follows:

A—Survey of existing kilns and furnaces, processes, methods of fuel utilization, equipment, unit costs, sales aspects, future trends, etc.

B—Interpretation and classification of survey for subsequent use of industrial gas engineers in the field.

C—Collaboration with the A. G. A. Committee on Industrial Research, American Ceramic Society, Kilns and Fuel Committee of the U. S. Potters Association and other agencies interested in fuel utilization.

D—Studies of fundamental requirements of each process where heat is used, with particular emphasis to heating and cooling cycles, time-temperature contacts, effect of water vapor, forced and induced draft, volume and speed of heating gases, etc.

It is obvious that important proposals for scientific research problems will originate in the work of this committee. The various ceramic firing problems involve practically all principles of heat transmission laws, but the extremely diversified nature of physical and chemical combinations can by no means be subjected to generalizations, or failure will result. Since the ceramic industry expends from 10 to 30 per cent of its total manufacturing costs for fuel in its heating processes, the subject is constantly alive within that industry. Adherence to inadequate firing methods in the face of supplantive competition, results in economic waste and it is to be hoped that many remedial measures will be found as a result of present and future research, governed by factors other than the conventional ones bidding for recognition. Safe continuation of the marketing of our fuel depends upon the anticipation of new developments, inviting demand and utilization and it is for us to recognize this duty and carry on this work for "We can stand still in a flowing stream, but not in the world of mankind."

TECHNICAL SECTION

C. A. HARRISON, Chairman H. W. HARTMAN, Secretary F. A. LYDECKER, Vice-Chairman

1934 Distribution Conference in session at Detroit, Michigan

Distribution Conference To Be Held in Cleveland

ERICK LARSON
Chairman, Distribution Committee

THE Hotel Cleveland, Cleveland, Ohio, has been selected as the location of the 1935 Distribution Conference which is to be held May 2-4. Most careful consideration is being given to the preparation of the program for the conference which will be published in full in the April issue of the A. G. A. MONTHLY.

It is possible at this time to stress only a few of the subjects which appear to be of greatest interest to date.

The Pipe Coating and Corrosion Subcommittee under Charles Turner of Cleveland is condensing a mass of data on this subject with a view to presenting practical information of value to the designing engineers and field men at the conference. In this connection an announcement will be made shortly of a plan to render more available to member companies the services of our Research Associate, Dr. Scott Ewing.

The Meter Subcommittee under D. P. Allen of Washington has made excellent progress in an ambitious program to review developments in the design and functioning of small sized consumer meters. Some modern thoughts on small capacity meter design will be presented. A meter performance study provocative of serious thought and indicating valuable potential local studies will undoubtedly result in an interesting discussion.

It seems certain from present progress that the subjects of dust fogging, rehydration and their related problems will be authoritatively presented at the conference. Pressure control, particularly as applied to line regulators, will be of interest to both the natural and manufactured gas men. Appliance regulators, servicing and installation of appliances with their ever-changing features, will be a subject of local interest to all companies.

Sales methods are extending into every available source of customer contact to produce results. Distribution departments have, in a number of localities, been made a vital factor in developing leads for appliance sales through the contacts which their outside employees have with the public.

Effect of Employee Instruction

The effect of distribution employee instruction for the promotion of sales on the regular work will be discussed. Many firms are starting or contemplating sales policies affecting distribution employees, so that this presentation will be foresighted.

Transportation equipment, tools, wrinkles, safety, gasket material, are all live subjects which directly affect costs. The latest available material on each of these subjects will be presented and discussed.

The subjects for open forum discussion are too numerous to dwell upon here. While many topics have been suggested, the preferable ones are those it is hoped will be presented at the conference by the distribution engineers in attendance. The Distribution Conference offers a means of accumulating knowledge on the many difficulties encountered in daily practice. The contacts made are valuable in furnishing individuals with direct sources of information on their particular problems.

An outstanding opportunity of the 1935 Distribution Conference will be afforded by an actual exhibit of the past accomplishments, together with the present and contemplated endeavors of the A. G. A. Testing Laboratory. The accomplishments of the Laboratory have won national and international recognition, resulting in an established reputation as an authority on the development of tests in numerous phases of gas distribution, utilization and in the field of pure research.

Visiting our Laboratory is the most convincing method of determining the excellent facilities available there to pursue research not only in problems of national scope but also in those of particular localities. Often the equipment is not available locally for experiments and the expense is unwarranted when its further usefulness would be doubtful. The Laboratory renders a valuable service as a consultant and testing medium in such cases.

More details will be presented in the next issue.

Elected Director

DIRECTORS of the Puritan Life Insurance Company at their regular monthly meeting elected Frederick C. Freeman, president of the Providence Gas Company, to the board. Mr. Freeman, who is also a director of the American Gas Association, fills one of several vacancies which have existed for some time.

Monthly Summary of Gas Company Statistics

For Month of December, 1935

Issued March, 1932, by the Statistical Department of the American Gas Association
420 Lexington Avenue, New York, N. Y.

PAUL RYAN, Chief Statistician

COMPARATIVE DATA ON THE MANUFACTURED AND NATURAL GAS INDUSTRY FOR THE MONTH OF DECEMBER

	Month of December			Twelve Months Ending December 31		
Customers	*1934*	*1933*	*Per Cent Change*	*1934*	*1933*	*Per Cent Change*
Domestic (Including House Heating)	14,855,200	14,553,500	+ 2.1			
Industrial and Commercial	767,900	748,200	+ 2.6	*See December*		
Total	15,623,100	15,301,700	+ 2.1			
Revenue (Dollars)						
Domestic (Including House Heating)	48,593,400	47,494,700	+ 2.3	511,445,600	512,829,000	— 0.3
Industrial and Commercial	16,914,600	15,306,500	+10.5	185,741,500	166,600,600	+11.5
Total	65,508,000	62,801,200	+ 4.3	697,187,100	679,429,600	+ 2.6

COMPARATIVE DATA ON THE MANUFACTURED GAS INDUSTRY FOR THE MONTH OF DECEMBER

Customers						
Domestic	9,440,400	9,328,000	+ 1.2			
House Heating	118,200	80,900	+46.1	*See December*		
Industrial and Commercial	442,800	437,900	+ 1.1			
Miscellaneous	8,900	9,500	—			
Total	10,010,300	9,856,300	+ 1.6			
Gas Sales (MCF)						
Domestic	19,817,200	20,576,700	— 3.7	241,710,000	244,100,700	— 1.0
House Heating	4,747,000	3,659,000	+29.7	29,639,700	20,779,200	+42.6
Industrial and Commercial	7,465,000	6,636,200	+12.5	87,209,100	73,922,000	+18.0
Miscellaneous	192,600	181,700	—	2,147,500	2,053,300	—
Total	32,221,800	31,053,600	+ 3.8	360,706,300	340,855,200	+ 5.8
Revenue (Dollars)						
Domestic	24,141,100	24,877,200	— 3.0	294,821,600	299,017,000	— 1.4
House Heating	2,954,100	2,346,300	+25.9	19,497,900	14,607,900	+33.5
Industrial and Commercial	5,767,900	5,576,500	+ 3.4	67,332,800	64,145,900	+ 5.0
Miscellaneous	139,400	136,000	—	1,513,200	1,532,300	—
Total	33,002,500	32,936,000	+ 0.2	383,165,500	379,303,100	+ 1.0

COMPARATIVE DATA ON THE NATURAL GAS INDUSTRY FOR THE MONTH OF DECEMBER

Customers						
Domestic (Including House Heating)	5,296,600	5,144,600	+ 3.0			
Commercial	284,700	275,700	+ 3.3			
Industrial	29,500	23,300	+26.6	*See December*		
Miscellaneous	2,000	1,800	—			
Total	5,612,800	5,445,400	+ 3.1			
Gas Sales (MCF)						
Domestic (Including House Heating)	34,066,000	31,406,200	+ 8.5	288,278,700	287,386,000	+ 0.3
Commercial	7,091,700	5,827,500	+21.7	55,805,500	52,561,700	+ 6.2
Industrial	48,042,900	41,933,600	+14.6	563,308,800	466,107,100	+20.9
Miscellaneous	1,104,100	1,132,400	—	12,105,700	8,700,400	—
Total	90,304,700	80,299,700	+12.5	919,498,700	814,755,200	+12.9
Revenue (Dollars)						
Domestic (Including House Heating)	21,498,200	20,271,200	+ 6.1	197,126,100	199,204,100	— 1.0
Commercial	2,975,800	2,567,400	+15.9	25,340,000	24,340,800	+ 4.1
Industrial	7,849,900	6,830,300	+14.9	89,621,900	75,075,800	+19.4
Miscellaneous	181,600	196,300	—	1,933,600	1,505,800	—
Total	32,505,500	29,865,200	+ 8.8	314,021,600	300,126,500	+ 4.6

Gas Revenues Gain 4.3 Per Cent in December

REVENUES of manufactured and natural gas utilities totalled $65,508,000 in December, an increase of 4.3 per cent from the figure of $62,801,200 reported for December 1933.

Revenues of the manufactured gas industry aggregated $33,002,500 for the month, an increase of 0.2 per cent. The natural gas utilities reported revenues of $32,505,500, which were 8.8 per cent above the figures for December 1933.

Sales of manufactured gas reported for December totalled 32,221,800,000 cubic feet, an increase of 3.8 per cent, while natural gas utility sales for the month were 90,304,700,000 cubic feet, an increase of 12.5 per cent.

Sales of manufactured gas for domestic cooking, water-heating, refrigeration, etc., continued to run about 3.7 per cent below a year ago. Sales for house heating purposes, however, registered a sharp gain, amounting to 29.7 per cent over the corresponding month of the preceding year. Manufactured gas sales for industrial-commercial uses were also above those of a year ago by 12.5 per cent.

A. G. A. Proceedings Wanted

A LIBRARY in a large eastern city desires to secure copies of the following sections of the A. G. A. Proceedings for 1920: Accounting, Commercial, Manufacturers' and General Sessions. Any information as to where extra copies of these Proceedings may be located will be gratefully received by the American Gas Association, 420 Lexington Avenue, New York City.

THE function of a government is to govern, but not to compete with the people it governs in those activities by which the people make their living.

Let us hold fast to that principle—we are suffering enough from the Dominion's public ownership follies without indulging in similar follies of our own.

Once a government departs from that principle—once it shoulders the burdens and responsibilities of business—then debts accumulate, the sources of taxation begin to dry up, initiative is destroyed, palms on every hand are held out for greasing, and disaster looms near. *—Montreal Daily Herald.*

Sterrett Elected President

AT a meeting of the board of directors held February 11, H. R. Sterrett was elected president of the New Haven Gas Light Company to succeed Clarence Blakeslee who becomes chairman of the board.

Reference Books for Heating Salesmen

THREE reference books now available should be useful to gas company salesmen and engineers when estimating and checking automatic gas burner installations. Two of these volumes give tabular data on steam and water boilers, including boiler numbers, grate area, heating surface and manufacturer's rating. There is no duplication of the models described.

The Pape-Swift Boiler Reference Books, 1934 and 1935 editions, describe the models of forty-nine separate manufacturers. The Pape-Swift Radiator Reference Book, 1934 edition, describes the equipment furnished by nineteen manufacturers. The heating surface and manufacturer's rating is given as well as a cut which will help to identify the older types of radiators. All three of the books are priced at $1.00 each plus 10c for postage.

All information contained in these volumes is given exactly as furnished by the manufacturer and is planographed and sold by the John S. Swift Company Inc., 230 West 17th Street, New York City.

San Diego Space Heater Campaign

THE San Diego Gas Appliance Association sponsored a gas space heater campaign from November 8 to December 18. Main feature of the campaign was a double page spread in each of the three San Diego newspapers once a week. The pages were made up of 20 per cent publicity, a 3-column 12-inch advertisement by the gas company, and individual advertisements by the eighteen cooperating dealers.

The company paid one-half the cost of the dealer advertising upon the dealer agreeing to place three advertisements a week for the six weeks' period, to use a minimum of 10 inches and a maximum of 20 inches for each advertisement, to advertise gas space heaters exclusively, and to feature only A. G. A. approved appliances. There was no uniformity as to price or terms.

The Association also used five illuminated billboards, three radio announcements a day, dash board cards on street cars, window cards, and maintained a free window display service for dealers.

Clark Chamberlain, secretary of the Gas Appliance Association, reports that sales were greatly stimulated, daily sales in some cases exceeding the best month's sales last year.

Note to Exporters

HAMPTON, Watson & Cia., 126 B. Perez Galdos, Buenos Aires, wishes to hear from manufacturers interested in exporting domestic ranges, instantaneous automatic water heaters, storage automatic water heaters, tank heaters and instantaneous automatic wall type water heaters. The firm is contemplating the importation of these products. Communications should be addressed to T. Watson.

Burnham Boiler

The Burnham-Simplex gas-fired boiler for house heating which was approved by the A. G. A. Laboratory, is being manufactured and marketed by the Burnham Boiler Corporation, whose headquarters are in Irvington, N. Y., and who have manufacturing plants and sales offices in various cities.

Water Heater Manual

Latest edition of the popular **gas appliance service series.**

Designed especially for the fitter, plumber, salesman and home service worker.

A detailed analysis of water heater operation and servicing that will help bring about higher operating efficiencies and increased customer satisfaction.

224 pages of factual information.
95 specially labeled instruction drawings.

Price $1.00 a copy, delivered

Address

AMERICAN GAS ASSOCIATION
420 Lexington Ave., New York, N. Y.

Personnel Service

SERVICES OFFERED

Experienced **gas appliance salesman** (28), married, with good education, is desirious of locating with a public utility as sales supervisor or as district representative for a manufacturer. Have had experience in both ends. Prefer eastern states, but will go anywhere. Can furnish best of references. **904.**

Technical graduate (29) (B. S. and M. S. in Mech. Engr.) four years' utilization, distribution and construction experience with large natural gas system; married. **905.**

Experienced **gas range** engineering executive wishes to affiliate with reliable manufacturer. Capable of taking complete charge of design and experimental, laboratory departments, factory methods and correcting production problems. **908.**

Industrial **Gas Sales Representative** (43). Adjusting, repairing, designing and selling appliances and burners to every industry. Manufacturer and gas utility experience, domestic and industrial. Married. **912.**

Engineer, broad experience in production, distribution, accounting and management; analysis distribution systems and preparation immediate or future extensions; making and testifying to inventories and valuations in rate and tax cases. Qualified install continuous inventory. **913.**

Salesman, electrical products (30), married graduate electrical trade school. Eight years' experience New York City selling electrical appliances, specialties and material to industrials, public utilities, chain and department stores, realty companies, banks, jobbers and retailers. Also experienced sales promotion and missionary work. **914.**

Gas Engineer, 20 years' practical experience in all branches—manufactured and natural gas—holding company experience—highly successful in improving operating and distribution conditions. Recognized expert in federal court and commissions on appraisals and gas company operations. **917.**

Graduate Engineer, eight years' experience Public Utility operation and financing. Operating experience all types manufactured, natural gas, electric, water, ice companies. Financial experience organization new and reorganization of old companies. **918.**

Junior Statistician, 10 years' experience public utilities. Versed in statistical routine, special reports, unit costs, special studies, preparation of forms in reporting or summarizing balance sheet, operating revenue and operating expense items, graphical presentation of results, reports for trade associations, Federal Trade Commission, etc. **919.**

Executive Manager (39). Technically trained university man; 18 years' experience available due consolidation of gas & electric properties. Broad experience, covering all phases of industry. Especial attention to Sales Promotion & Public Relations. **920.**

Exceptional experience as **Key Man** to executives suggests there is a similar position where knowledge of controlling corporate, financial, and legal requirements of corporations of different states, together with security sales promotion, modern budgets and statistical interpretation has a place. Can fully substantiate above at interview. **921.**

Personnel Director with deep convictions on value of public relations and employee's education, believing that a correctly informed public is a friendly public, that better trained employees insure stability and profits; all possible with low overhead. Have had ten years' experience in one of America's largest utilities. Good references. **922.**

Accountant-Auditor, twenty years' diversified experience, home and abroad, on gas and oil, railways, foundries, sugar mills, general construction and bus transportation; five years last position handling consolidations, mergers and reorganization. Good personality, speaks and writes Spanish fluently. **923.**

Salesman thoroughly seasoned in domestic and industrial appliances, with refrigeration a specialty, seek connection eastern or midwest company. Fourteen years' experience all phases of appliance merchandizing—cold canvass, new business manager—advertising—cooking schools, married (38). **924.**

Young (24) wide awake, conscientious and ambitious. Five years' experience in analysis of utility operations, including sales and promotional activities plus three years' university training in advertising. Should fit well in advertising department of operating company, holding company, or manufacturer advertising agency. Single. **925.**

SERVICES OFFERED

Salesman (35) 14 years' appliance experience with a background of both utility merchandising and manufacturer representative of ranges and space heater experience. Wishes to connect with reputable manufacturer to contact utility and dealer trade; well acquainted with Midwest. **926.**

General Office Worker (37) principally pay roll preparation, auditing and paymaster with large industrial organizations. Now employed and studying accounting at university night course; seeks change. **927.**

Executive engineer-accountant and commercial sales manager desires connection. Thorough experience with all branches of utility operation and **new business promotion.** Good public relations experience. Location no object. Thorough statistician—accountant. **928.**

Engineer-Secretary of gas and electric association in important progressive state. Has combined engineering, statistical and general organization and promotional work with appearances before committees, commissions and various types of audiences. Thoroughly familiar with state regulation and procedure, employee training, customer and trade relations work; available short notice. **929.**

Sales-New Business manager: Extensive training, experience initiating, directing advertising, publicity, sales campaigns; developing costs, rates, selling prices; supervising salesmen, commercial, public relations; outstanding record as industrial gas and power engineer; resourcefulness and ability to meet and solve new problems; highest credentials; salary secondary to connection offering good future prospects. **930.**

Engineer—Eleven years in gas industry. Familiar with manufacture and distribution large system, both high and low pressure. Experienced in making investigations and unusual test; have proficient understanding of burner design and combustion. Well fitted for Superintendent or Manager. **931.**

Editor and **Writer.** Qualified for research, editorial work, writing, in business field. Have written correspondence courses and edited technical as well as general business material. Executive experience. **932.**

Advertising Man (29), experienced in gas utility field. Competent advertising manager for smaller company or manufacturer or will fit well into a department. Copy writing, layout and publicity experience. Thorough knowledge of mechanics of production. Recommendation from previous employer. Record will stand closest scrutiny. Married. **934.**

Sales Manager—sales promotion manager—**salesman**—competent, aggressive, experienced, —for gas company or manufacturer wanting successful sales. Appliances, gas merchandise, gas distribution supplies, plumbing, heating specialties. Twelve years' effective selling, promoting, advertising, managing volume sales for leading specialty manufacturers. National gas company executive, jobber and consumer contacts. Mature college man. **935.**

University graduate, woman (College of Architecture) desires position in **kitchen planning** or related work; course in architectural design completed June 1934. Sketches supplied upon request. **937.**

Chemical Engineer, now employed; 10 years' thorough experience in carburetted water gas plants. Familiar with latest equipment and processes including heavy oil operation, tar dehydration and gum control. **938.**

Mechanical Engineering Graduate (1934) desires position with engineering or manufacturing concern. Has ability to carry out instructions or use initiative as desired; realizes must earn a profit for his employer. **939.**

Manager with long experience in handling properties having up to 3500 meters, desires change. Can furnish desired references. Now employed. Has operated natural gas property for past five years. **940.**

Utilization and **Sales Engineer;** long experience New York metropolitan area and adjacent vicinity in house heating, industrial water heating and restaurant work; also testing and installation. Well acquainted with gas companies, commercial outlets, architects and others in district mentioned Have worked for gas companies and manufacturer of gas appliances. **941.**

Gas Engineer. College graduate, 23 years' experience both manufactured and natural gas, highest credentials, capable of taking complete charge, thoroughly proficient in installation of industrial and house heating equipment. long experience in sales, utilization and installation of domestic, industrial and commercial appliances, available on short notice, due to consolidation. **942.**

Advertising, Publicity, **Public Relations.** Practical experience in all phases of these endeavors with large western gas and electric company and two outstanding railroads, covering many years. Have conducted employees' magazine, written speeches for executives and employees. Familiar with advertising agency methods or placing direct. Exceptional references and available quickly. **943.**

Gas Engineer of broad experience in all branches—Supervising Engineer in Holding Company—successful in improving operating and distribution conditions—Inventories, appraisals, reports of examination, rate structures, budgets, organization, supervision. Recognized gas expert. Highest references. Available immediately, temporary or permanent servic. **944.**

Sales Engineer desires employment; broad experience with Eastern Gas Utility. Friendly consumer relations of first importance. Specialized in sales, service and maintenance covering House Heating, Industrial Steam and Water Heating. Married. **945.**

Experienced office executive, **Sales Promoter,** and salesman. Associated with leading manufacturers for over fifteen years. Contact with utility companies, building, dealer and retail trades. Desirious of locating with a progressive organization. Thoroughly experienced in all phases of office routine, supervision of help, appliance construction, selling and promotional work. **946.**

Appliance Salesman. Experienced and capable salesman is considering new connection. Anything in the stove line, which includes supervision or managerial ability, or salesmanship is acceptable. **947.**

Gas Engineer and operator with fifteen years' experience including manufacture, distribution, sales promotion and especially experienced and trained in the present necessary field of **Customer Relations** and **Service** desires to associate himself with a company needing an operator, local manager, a competent department head or a customer relations supervisor. **948.**

POSITIONS OPEN

Gas Range Equipment **Designer.** Experienced with tool equipment and assembly of gas ranges, also knowledge of drafting board. Good opportunity for advancement. Write full details of experience, references and salary expected. **0282.**

Local manager wanted for small water gas plant. Sales and collection ability of primary importance, but applicant must have had actual experience and be able to get results as plant operator. Small plant experience essential. **0283.**

Manufacturer of combination new radiant type broiler, griddle and toaster, launching national sales program, desires **state representative** with distributor dealer franchise ability. Prefer those who are now representing other similar lines, or with past successful sales experience. Here is a real item at a real price with a liberal sales commission. Please give complete information in your application. **0284.**

Utilization Engineer with wide knowledge of gas burner design and actual experience in the design, application and installation of gas burning equipment to central heating, steam raising and other industrial uses; must have had natural gas experience. Eastern location. **0285.**

An old, established concern having a complete line of gas fired boilers and furnaces desires high class **representation** in eastern, southern, and central territory. Will be interested if your lines are non-competitive. **0286.**

Sales Representative or **Distributor.** A large middle west manufacturer of a complete line of gas-fired automatic water heaters desires representation in the Los Angeles and Southern California territory. Prefer those who are now representing other lines of gas appliances, also those who can properly service 4,000 units now in that territory. **0287.**

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